PROJECT MEMORANDUM

RAND

Early Lessons from the Low Back Pain Practice Guideline Demonstration

Conducted with the Army Medical Department

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PREFACE

RAND has been working with the Army Medical Department on a project entitled "Developing and Implementing Clinical Practice Guidelines in the Army Medical System." This study is assisting the Army Medical Department in developing and testing methods to effectively implement clinical practice guidelines in the Army treatment facilities to achieve consistent and quality clinical care practices across the Army health system. Three sequential demonstrations are being conducted to test and refine implementation methods before embarking on full systemwide activities. The first demonstration is being performed with the participation of four treatment facilities in the Great Plains Region, which are implementing a practice guideline for primary care management of low back pain.

This report presents the early findings of the process evaluation that RAND conducted as part of the low back pain guideline demonstration. The evaluation examines the experiences of participating facilities during the first three months of the demonstration, and documents their feedback on the guideline and related materials provided to assist their implementation activities. Lessons learned from this demonstration already are being applied to strengthen the second and third demonstrations, which are implementing practices guidelines for management of asthma and diabetes, respectively.

This research is sponsored by the U.S. Army Surgeon General. It is being conducted jointly by RAND's Arroyo Center, a federally funded research and development center sponsored by the U.S. Army, and by RAND's Center for Military Health Policy Research.

ACKNOWLEDGMENTS

An extraordinary amount of commitment and hard work by numerous individuals has contributed to the AMEDD demonstration for implementing the DoD/VA low back pain guideline in the Great Plains Region. In particular, we wish to acknowledge the efforts of the guideline champions, facilitators, and action team members at the Army treatment facilities participating in the demonstration: William Beaumont AMC, Darnall ACH, Evans ACH, and Reynolds ACH. Because this was the first demonstration, these individuals were faced with delays and other challenges during the early months, as MEDCOM, RAND, and the MTFs themselves experienced a steep learning curve – the proverbial "learning by doing." These teams have persisted in their implementation efforts, achieving observable progress in changing clinical practices and offering invaluable feedback on how to make the process stronger and more efficient.

We also thank the leadership team at MEDCOM who have guided this project and have participated as active partners in the development and evaluation work on the low back pain demonstration. LTC Kathryn Dolter, who has primary responsibility for the MEDCOM guideline implementation program, has shown unflagging commitment to learning from our demonstrations and making this important program come to life. Her willingness to lead and to listen to those in the field have been critical factors to the progress made to date. These efforts have been supported by COL Sid Atkinson, Chief of the MEDCOM Quality Management Division. Finally, without the policy and financial support of the Center for Healthcare Education and Studies, previously headed by COL Stuart Baker and now by COL Harrison Hassell, this project would not have been possible.

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SUMMARY

The Army Medical Department (AMEDD) has made a commitment to establishing a structure and process to support its military treatment facilities (MTFs) in implementing evidence-based practice guidelines to achieve greater consistency and quality in medical care. The AMEDD has contracted with RAND to work as a partner in the development and testing of guideline implementation methods for ultimate application to an Army-wide guideline program. Taking the approach of testing new methods on a small scale, the AMEDD/RAND project is fielding three sequential demonstrations over a two-year period. In each demonstration, participating MTFs are implementing a different practice guideline from those that have been established collaboratively by the Department of Defense (DoD) and the Veterans Health Administration (VA). As a demonstration progresses, RAND performs a process evaluation to learn from the experiences of participating MTFs, and the cumulative results of the evaluations guide preparation for each subsequent demonstration.

The first of the demonstrations was implementation of the DoD/VA low back pain practice guideline by four MTFs in the Great Plains Region. This report presents early results from our process evaluation for this demonstration, which covers the first three months of implementation activities by the participating MTFs.

BACKGROUND

In early 1998, the DoD and VA initiated a collaborative project to establish a single standard of care in the military and VA health systems, which is led by a Working Group consisting of two representatives from each of the three military Services and the VA. The goals of this project are to adapt existing clinical practice guidelines for selected conditions; to select two to four indicators for each guideline to benchmark and monitor implementation; and to integrate DoD/VA prevention, pharmaceutical and informatics efforts. The DoD/VA Working Group designates an expert panel for each practice guideline, with a mix of Service affiliation and clinical backgrounds relevant to the health condition of interest. The expert panel adapts existing national guidelines to establish a guideline for use in the military and veteran health systems, and it develops recommendations to the DoD/VA Guideline Working Group for a limited number of metrics (2 to 4) for monitoring progress in guideline implementation.

The practice guideline for Primary Care Management of Low Back Pain being implemented in the AMEDD Great Plains Region demonstration was one of the first DoD/VA guidelines. The low back pain expert panel generated a draft algorithm and summary guideline in November 1998 and the final guideline in May 1999. In April 1999, the panel recommended metrics for monitoring, which were presented in a written report (see Appendix B). The DoD/VA Working Group has approved two metrics recommended by the panel and is evaluating another two metrics for measurement feasibility.

In the AMEDD/RAND guideline implementation project, AMEDD, RAND, and the participating MTFs are testing and refining guideline implementation methods in a “continuous improvement” cycle leading to systemwide implementation. The DoD/VA low back pain guideline was introduced in the Great Plains Region in November 1998, and the asthma guideline demonstration began in the Southeast Region in August 1999. The diabetes guideline will be

introduced in the Western Region in late 1999. The guideline implementation process consists of the following components:

- Practice guideline and metrics
- Guideline toolkit of materials to support the MTFs' guideline implementation activities
- Kickoff planning conference for MTF implementation teams to plan their implementation strategies and action plans.
- MTF implementation activities
- Information exchange among implementation teams
- Monitoring of MTFs' progress in achieving the desired clinical process changes.

To learn from the experience of the MTFs during the demonstration, the RAND team uses a participant-observer approach to facilitate shared learning with the MTFs throughout the demonstration and evaluation process. The Process Evaluation Plan for Guideline Implementation Demonstrations (see Appendix C) describes our evaluation design and questions. Three site visits are performed during each demonstration: an introductory visit before the kickoff conference, a post-implementation visit at three to four months after the MTFs start guideline implementation, and another visit about six months later. During each post-implementation visit, RAND staff interview the MTF's guideline team and other individuals involved in guideline implementation. Monthly reports submitted by the demonstration sites document their progress in carrying out or modifying their action plans. Summary reports of the site visits for the four MTFs are provided in Appendix D.

THE LOW BACK PAIN DEMONSTRATION SITES

The Great Plains Region was selected for the low back pain demonstration because of the diversity of the posts in the region and the populations they serve. One-third of the Army active duty personnel are stationed at Great Plains Region posts, and large numbers of military retirees and dependents live within their catchment areas. Four MTFs in the Great Plains Region are serving as demonstration sites for implementation of the low back pain guideline:

- William Beaumont AMC at Ft. Bliss
- Darnall ACH at Ft. Hood
- Evans ACH at Ft. Carson
- Reynolds ACH at Ft. Sill

As Army community hospitals (ACH), Evans, Darnall, and Reynolds provide mainly primary care services with some specialty care. William Beaumont Army Medical Center (AMC) had a focus on specialty care services prior to 1996, but has been shifting to a mix of primary care and specialty care in recent years. Darnall ACH and William Beaumont AMC have extensive medical education training. Evans ACH and William Beaumont AMC have Wellness Centers, and William Beaumont AMC was a test site for "Putting Wellness into Practice." Evans ACH and Reynolds ACH are sites for the DoD-Medicare Subvention Demonstration. These two MTFs also are Chiropractic Demonstration sites. Sites vary in their prior experience with clinical guidelines or pathways and in the sophistication of their computer support.

A treatment facility's culture and operating climate will influence the extent to which it achieves lasting improvements in clinical care processes through guideline implementation. To collect data on the baseline climates in the four MTFs in the low back pain guideline

demonstration, we asked the members of the MTF command teams and implementation teams to complete a multi-part survey on motivation and attitudes toward quality improvement and health care corporate culture. The climate survey consists of 5 modules that address: motivation for guideline implementation, supportive climate for implementation, attitudes toward practice guidelines, hospital culture, and efforts to improve quality of care.

The climate survey results indicate that the MTF implementation teams embarked on the low back pain guideline demonstration with a high level of commitment to quality improvement and with internal corporate environments that tended to support guideline implementation efforts. Yet at the start of the demonstration, the MTF teams appeared to be only moderately positive in their attitudes toward practice guidelines and their motivation to use them to bring about desired quality improvements. These views could reflect a combination of some natural resistance by clinicians to the concept of practice guidelines, the uncertainty of participating in the demonstration, and concerns about increased workload.

PREPARATION AND SUPPORT FOR GUIDELINE IMPLEMENTATION

The November 1988 date for the demonstration kickoff conference coincided closely with the expected date of completion of the DoD/VA practice guideline. This tight schedule did not allow sufficient time to complete the guideline and develop the toolkit materials, resulting in a delay in the implementation schedule until March 1999 and associated loss of momentum. Despite these challenges, the sites have made progress in integrating the guideline's practice standards into care for low back pain patients. As the guideline was finalized and toolkit materials became available, the sites incorporated these materials into their activities.

Preparing for Implementation

The demonstration kickoff conference was held on 19-20 November 1998 in San Antonio, TX, with participation by a total of 60 individuals from the four demonstration MTFs and attendance by 15 individuals from other MTFs in the region as observers. During the conference, the teams developed their implementation action plans using a planning process facilitated by a designated member of the MTF's team. The Regional Commander attended the end of the conference and received a briefing from each MTF team on its action plan.

MEDCOM and the Center for Health Promotion and Preventive Medicine (CHPPM) worked collaboratively to develop a toolkit consisting of materials and information to support implementation of the low back pain guideline. The toolkit concept and design evolved during the early months of this demonstration, as the participating MTFs offered feedback that they desired such support and materials. The toolkit was distributed to the demonstration MTFs and the other MTFs in the Great Plains Region. The first three tools completed were a test documentation form (MEDCOM Form 695-R) for low back pain patients that is intended to substitute for the SF-600 documentation form, a patient education pamphlet for low back pain self-care, and a video for training providers on the low back pain guideline as part of their CME activities. Other toolkit items include a patient education video, a pocket card containing the key points of the low back pain guideline, and a one-page laminated 8-1/2" x 11" sheet presenting the guideline algorithm. The Form 695-R and pocket card are presented in Appendix F.

We explored mechanisms to support information exchange to help the MTFs learn from each other, including e-mail and internet-based systems as well as periodic audio and video conferences. To guide the design of a listserver system, participants at the kickoff conference were asked to complete a survey on their use of electronic media (e-mail and the web) and their interest in various listserver features. The survey results highlight the importance of the e-mail medium. Almost three-quarters of the participants reported they have regular access to an e-mail system, but less than 10% have regular access to the internet. Over 75% of the participants reported they had experience with an e-mail listservers, compared to 29% having used a web-based system. Almost two-thirds of the demonstration team members reported they would prefer to use e-mail for communications during the demonstration. Comments provided on the survey reflected a desire for a fast, easy-to-use system.

An early decision was made to use the AMEDD Knowledge Management Network (KMN) as the primary electronic communications platform for the practice guideline demonstrations, despite the stated preferences by conference participants for an e-mail based system. This decision was made because the AMEDD leadership wished to use existing AMEDD capabilities for the guideline implementation activities whenever possible. In addition, KMN offered a sophisticated set of functions to support various approaches to communications and sharing of materials.

Because the DoD/VA guideline team did not complete its work on the low back pain guideline metrics until April 1999, the demonstration sites did not have access to metrics information early in their implementation activities. Since then, the DoD/VA Working Group has established the DoD/VA low back pain metrics based on the recommendations of the expert panel, and the panel's report was distributed to all Army MTFs in September 1999. The panel also identified other metrics that MTFs may use to monitor their implementation progress.

Feedback from the Demonstration Sites

The early implementation activities of the demonstration sites provide useful evaluation information on the low back pain guideline itself and on the structure, processes, and support materials needed to assist the MTFs in their implementation activities. In the first post-implementation site visits, sites were asked to provide feedback on various aspects of the implementation process. MEDCOM is using this information to revise the process and tools specific to low back pain guideline implementation. In addition, this knowledge has been transferred to the start-up of the asthma and diabetes guideline demonstrations, to improve the planning process and materials, implementation toolkit, and metrics.

The Low Back Pain Guideline. Clinical staff who have worked with the guideline were generally positive about it. One site inserted notes in the guideline algorithm to interpret how to apply the guideline to local practice, all of which helped clarify the guideline annotations. Physicians stated, however, that the full guideline document was too large for any use other than in the initial training session. Primary care physicians want summary information that is contained on one sheet or a pocket card. They also raised concerns about problems applying the guideline for basic trainees and multiple ailments cases, as well as the timing of when to refer chronic low back pain cases to the MEB/PEB process.

The Planning Process and Kickoff Conference. Overall, MTF participants found the planning activities at the kickoff conference to be useful. On the conference evaluation, 48% of the participants said they would use 100% of what they learned at the conference, and an additional 38% said they would use 75% of what they learned.

Site's Assessment of Existing Toolkit Items. Perhaps the most consistent feedback received about the toolkit items was dissatisfaction with the delays in getting them to the sites, which continued into the summer 1999. The MEDCOM documentation Form 695-R was reported to be the most important item in the low back pain toolkit. Physicians interviewed generally liked the form, but many of them indicated that it did not fill all of their needs. Therefore, some sites are using the SF-600 with the Form 695-R as an overlay, rather than replacing it as intended. Several revisions were suggested that are being considered by MEDCOM and the demonstration MTFs. The patient education pamphlet was universally praised by physicians and other clinic staff, and they reported that the brochure also has been well received by patients. The MTFs suggested new items to add to the toolkit to assist in guideline implementation, including a standard temporary profile form, a model back class, training material for nurses and administrative staff, and posters.

Information Exchange. When the KMN community site for the low back pain demonstration was set up in December 1998, it was learned that each person must carry out his/her own KMN registration. Registration involved a lengthy series of steps, and those who attempted to register reported that they found the process to be confusing. Fewer than 20 demonstration participants registered on KMN, and fewer than 5 participants used the community site more than 3 or 4 times. MTF team members stated that the KMN was difficult to use and required too much time for the benefit of the information they could obtain. The teams reported differing levels of desire for ongoing information exchange, yet when offered the opportunity, participants at every site appeared to be interested in learning what the other sites were doing in their implementation activities. MEDCOM has used teleconferences, videoconferences, and the site visits to share this information, and it plans to continue this communication strategy.

IMPLEMENTATION STATUS AFTER THREE MONTHS

The four sites tended to approach implementation of the low back pain guideline by emphasizing provider education on the key guideline elements, giving less attention to actions to change clinic procedures. The sites varied in the time spent on training providers, ranging from 1 to 6 months of elapsed time. The sites' monitoring strategies were similar, with plans to track clinic visits and referral patterns to physical therapy, MRIs, and MEB. One site also planned to review temporary profiles and another planned to monitor referrals to back pain classes. Although the sites generally made few changes to the strategies and actions in their original action plans, the timing of implementation changed substantially when the official start date for implementation shifted from January to March 1999. Three of the four sites started to introduce the guideline by March, and the fourth site began by late April.

The Implementation Teams. Three of the implementation teams have from 7 to 11 members, which experience has shown to be optimal to generate effective group cohesion. The fourth team, Ft. Hood, is the largest of the sites and currently has a 19-member team.

Although this team is large, the presence of a guideline "champion" from each of Ft. Hood's eight TMCs and clinics has facilitated the site's decentralized approach to implementation. Two sites restructured their implementation teams to reduce their sizes and ensure that the key disciplines for the low back pain were represented.

Implementation Strategies. The demonstration sites used quite distinct implementation strategies. Two sites implemented the guideline *comprehensively*, giving about equal weight to both the acute and chronic components of the guideline and applying it to all low back pain patients including active duty personnel, family members, and retirees. The other two sites chose to *focus* their initial implementation efforts on particular patient groups or clinics. One site is emphasizing patient education, and has introduced a back class to teach first-time low back pain patients self-care for the current back pain episode and techniques to prevent future episodes. The other site initially is implementing the guideline only for active duty personnel, and is focusing implementation in its TMCs.

Implementation Actions. Despite their distinct strategies, the MTFs are using similar actions to carry out those strategies. Their main actions include introduction of the guideline logic and standards to primary care physicians, training of other clinic staff, use of the Form 695-R to document care provided to low back pain patients, patient education in self-care and exercise, and monitoring of implementation progress. None of the sites held *formal* training sessions for nurses, medics, physician assistants, and other supporting staff who are called upon to implement procedures that support guideline use by primary physicians. For at least one site, limited attention to the training needs of nurses and support staff was reported to have resulted in delayed and uneven implementation of procedures in support of the guideline.

At the kickoff meeting, teams were encouraged to manage practice changes by running small-scale tests before implementing changes organization-wide. One site tried this approach by asking two physicians in a TMC to field test the Form 695-R, in response to provider concerns that it would decrease efficiency. They concluded that the form was easy to use and shortened the time to process patients. After this small-scale test, primary care physicians readily accepted use of the new documentation form. Problems identified in use of Form 695-R include getting the form completed for patients who arrive right on time or late for appointments, patients with multiple ailments, second and subsequent visits, and attrition of knowledge due to rapid staff turnover.

All four sites viewed patient education as an important component of treatment for low back pain cases, but the relative emphasis placed on it varied greatly. Participants tended to feel that primary care providers need to do more to emphasize the importance of patient self-care and to explain the patient's expected role in low back pain prevention and treatment. Low back class attendance also was a concern, with rates of back class "no shows" typically exceeding 50 percent. For active duty personnel, one reason for non-compliance may be reluctance by soldiers to ask their commanders for release time for this purpose, or by commanders to grant the time.

Monitoring Implementation Progress. In general, the demonstration MTFs have been slow to establish monitoring metrics and protocols, which can be attributed partially to the absence of DoD/VA low back pain metrics to serve as a guide. The MTFs reported they

use different diagnostic codes for low back pain cases on the ADS coding sheets. MEDCOM and the MTFs resolved this issue by collaborating to choose one code for low back pain cases.

By the time of our visits to the sites in May and June 1999, the guidelines had been in use for less than 8 weeks at each site. The guideline had been introduced and was in some use in all TMCs at four sites, and in family and adult primary care facilities at three sites. The guideline also is in use in occupational health at three sites and in the emergency room at two sites. Three implementation teams appear to be working cohesively with a sense of shared goals and an ease in freely discussing implementation issues and problems. These teams have clear opinions about the strengths and weaknesses of the guideline, and they have adapted the low back pain practices to fit their specific priorities and circumstances. Members of the implementation team and primary care physicians at the fourth site have been less engaged in formulating an integrated implementation strategy. The site's approach to training physicians and other staff on the guideline has tended to be directed more by the individual TMCs than the guideline team, and buy-in to the guideline is not yet widely shared.

Several factors outside of the direct control of the sites' implementation teams appear to be affecting the acceptance and implementation of the low back pain guideline. These factors include competing demands for the MTF's resources and staff time, previous experience of the MTF with use of practice guidelines, differences in medical and administrative assets, and expected rewards from implementation. We were not always able to assess the relative importance of each of these factors in affecting guideline implementation. In subsequent visits we will seek to get a better understanding of the relative influence of these factors.

EFFECTS OF THE GUIDELINE

It is too early in the implementation of the low back pain guideline to draw definitive conclusions about its effects on clinical practices, service utilization, and patient outcomes. Reports of effects at this early stage are encouraging, although anecdotal. More emphasis will be placed on documenting these effects as the evaluation continues.

Effects on Efficiency. Before working with the low back pain guideline, many primary care physicians and other clinic staff were concerned that practicing according to the guideline might increase the time required for a low back pain visit. They found, however, that using the guideline and related tools often reduced their visit time.

Effects on Clinical Practices. Implementation of the low back pain guideline has resulted in changes in clinical practices at two demonstration sites. At one site, practice has been shifted from an emphasis on physical therapy to an emphasis on patient education and self care through provision of a back class during conservative treatment. Another site has reduced unnecessary specialty referrals for chronic back pain cases by establishing the physical medicine and rehabilitation (PMR) clinic as "gatekeeper" to triage referrals, reducing neurosurgery backlog from 10 weeks to 2 weeks without a proportional increase in PMR referral backlog.

Effects on Health Care Utilization. Two sites reported they may be seeing a decline in physical therapy visits after implementation activities started, but they could not yet confirm these trends. One site was aiming for a long-term decline of return cases for low back pain, as patients practice self-care and exercises, and re-injuries are reduced.

Integration of the Low Back Pain Guideline With Prevention. Two sites were actively working with unit commanders on primary prevention of low back pain injuries in active duty personnel by changing training procedures. One of these sites was implementing a preventive medicine ergonomics demonstration with the support of CHPPM.

LESSONS LEARNED FROM EARLY DEMONSTRATION ACTIVITIES

Our early evaluation findings highlight the importance of committing both leadership support and adequate resources to sustain the "change management" activities that lead to successful implementation of practice guidelines within the Army Medical Department. Any change in practices is difficult to implement because change requires people to relinquish habits and begin to think and act in new ways. When these changes involve introduction of guidelines that standardize clinical practices, resistance by many clinicians may be yet stronger because they fear loss of professional autonomy. Even with the best planning, an organization managing such significant changes tends to underestimate the amount of preparation, resources and time needed to do it effectively. The sites making the greatest progress to date are those that have dedicated staff time and effort to work closely with physicians and other clinic staff, to test the new practices and build their support.

As a facility progresses in integrating the guideline standards into its routine practices, the resources being applied to this activity can be reallocated elsewhere and continuing maintenance of desired practices can become an integral part of the facility's quality and utilization management activities. The MTFs have not yet determined how they will continue to monitor low back pain care, although some are considering approaches and establishing guideline management structures. This issue extends to the corporate level, where MEDCOM will need to have dedicated staff resources to work with the MTFs to modify practices. We summarize here some early lessons from the demonstration.

Preparing for Implementation

- Clarify the goals for implementation of practice guidelines, taking into consideration areas where flexibility may be appropriate to align achievement of goals with local priorities.
- Devise a focused and realistic implementation plan, including data for planning, actions for practice changes, short and long-term target dates, and provisions for plan updates.
- Have the practice guideline, toolkit, and metrics completed before starting guideline implementation processes.
- Design the toolkit items for primary care providers.

Supporting Implementation

- Align purpose and resources to ensure that MTFs have appropriate staff and resource support to enable them to fulfill expectations for guideline implementation.
- Maintain flexibility in guideline implementation, but clarify what is expected as potential exceptions arise from local MTF implementation activities.
- Plan for ongoing training to reinforce providers' knowledge and commitment to the practice standards in the guidelines.

- Strengthen and expand the low back pain toolkit as MTFs and others identify additional tools to support their implementation efforts.
- Facilitate exchange of information by multiple means to help enrich the information available to MTFs as they work to change practices.

Monitoring and Measuring Effects of Implementation

- Ensure consistent coding of low back pain cases (or other cases for other guidelines).
- Perform compliance audits to provide independent checks on use of documentation forms and identify possible errors or inconsistencies in documentation methods.
- Implement a systemwide monitoring process to ensure consistency in measurement of progress across the MTFs and to ease their monitoring burden.

Institutionalization of Practice Guidelines

MTF commanders and staff touched upon some issues involved in implementing multiple guidelines that merit consideration as systemwide implementation moves forward. Concerns were expressed along two dimensions: (1) getting new practices integrated into MTFs' standard procedures so that the change management phase of implementing each guideline can be time-limited and (2) managing practices and monitoring under multiple practice guidelines as MEDCOM introduces a growing number of guidelines. In addition, MTFs need to be aware that strategies that work for implementing and maintaining a few guidelines may not be sufficient for managing nine or ten guidelines. This is all the more noteworthy because the DoD/VA guidelines specifically target primary care practice. Some specific items raised during the site visits include:

- Provide incentives to implement practice guidelines.
- Phase-in additional guidelines individually and incrementally.
- Provide MEDCOM support and oversight during implementation activities.
- Automate medical records.
- Emphasize use of guidelines in graduate medical education.

Section 1
INTRODUCTION

The Army Medical Department (AMEDD) has made a commitment to establishing a structure and process to support its military treatment facilities (MTFs) in implementing evidence-based practice guidelines to achieve greater consistency and quality in medical care. The AMEDD has contracted with RAND to work as a partner in the development and testing of guideline implementation methods for ultimate application to an Army-wide guideline program.

Taking the approach of testing new methods on a small scale, the AMEDD/RAND project is fielding three sequential demonstrations over a two-year period, in each of which participating MTFs are implementing a different practice guideline. The three guidelines being implemented are those for primary care management of low back pain, asthma, and diabetes, all of which have been established collaboratively by the Departments of Defense (DoD) and Veteran Health Affairs (VA). RAND is performing a process evaluation for each demonstration to document the experiences of participating MTFs in putting the guideline into practice and to identify their successes and the challenges they encountered. The first of the demonstrations was implementation of the low back pain practice guideline by four MTFs in the Great Plains Region. This report presents early results from our process evaluation for this demonstration, which covers the first three months of implementation activities by the participating MTFs.

THE DOD/VA GUIDELINE ADAPTATION PROCESS

In early 1998, the DoD and VA initiated a collaborative project to establish a single standard of care in the military and VA health systems. This project is led by a Working Group consisting of two representatives from each of the three military Services and from the VA. The goals of this project are:

- Adaptation of existing clinical practice guidelines for selected conditions;
- Selection of two to four indicators for each guideline to benchmark and monitor implementation;
- Integration of DoD/VA prevention, pharmaceutical and informatics efforts.

The DoD/VA Working Group designates an expert panel for each practice guideline, consisting of representatives from the three military Services and the VA, with a mix of clinical backgrounds relevant to the health condition of interest. The expert panel is charged to review existing national guidelines for that condition, examine and update the scientific evidence supporting the guidelines, and adapt one or more of the guidelines to establish one for use in the military and veteran health systems. Each panel also is asked to develop recommendations to the DoD/VA Guideline Working Group for a limited number of metrics (2 to 4) to be used by the military Services and VA to monitor progress in guideline implementation.

Two aspects of the DoD/VA guideline adaptation process influenced the activities and schedule of the AMEDD/RAND practice guideline implementation project. First, the use of an expert panel for each practice guideline helps ensure that the guideline is relevant to the unique features of military and veterans' health care. However, forging consensus on guideline contents and the supporting scientific evidence among large numbers of clinical professionals can be time consuming. Second, the amount of work involved in adapting existing national, evidence-based

guidelines varies, depending on the topic. For mature guideline topics (e.g., diabetes), the adaptation process can build upon well established guidelines and other supportive materials. For other topics (e.g., low back pain or knee injury), guidelines may not exist, or they may be controversial or outdated, thus requiring more work by the DoD/VA guideline teams.

The practice guideline for Primary Care Management of Low Back Pain being implemented in the AMEDD Great Plains Region demonstration was one of the first three guidelines produced by DoD/VA expert panels.[1] The guideline consists of (1) three algorithms that define the logic for primary care of low back pain patients, (2) summary annotations that define recommended practices and standards, and (3) expanded annotations that document the scientific evidence supporting each guideline component. (See Appendix A for the algorithms.)[2]

The low back pain expert panel started its work with a planning meeting in August 1998, and it was anticipated at first that the panel would be able to complete the guideline by the end of 1998. However, the panel had generated only a draft algorithm and summary guideline by November 1998 and it needed an additional 6 months to complete the final guideline. (Other DoD/VA guideline adaptation efforts have involved similar time requirements.) In April 1999, the low back pain expert panel reviewed and recommended metrics for monitoring, which were presented in a written report (see Appendix B). The DoD/VA Working Group has approved two metrics recommended by the panel, and it is evaluating another two metrics for measurement feasibility.

THE AMEDD/RAND GUIDELINE IMPLEMENTATION PROJECT

The goal of the AMEDD/RAND project is to establish a system for implementing selected practice guidelines throughout the Army Medical Department and for monitoring the impacts of those guidelines on clinical care and outcomes. Three sequential demonstrations are allowing AMEDD, RAND, and the participating MTFs to test and refine guideline implementation methods in a "continuous improvement" cycle leading up to systemwide adoption, as shown graphically in Figure 1. As each demonstration progresses, RAND performs a process evaluation to learn from the experiences of participating MTFs, and the cumulative results of the evaluations guide preparation for each subsequent demonstration. At the same time, preparations are underway for expanding to systemwide use of the practice guidelines.

Since late 1998, two of the three planned demonstrations have begun. The DoD/VA low back pain guideline was introduced in the Great Plains Region in November 1998, and the asthma guideline demonstration began in the Southeast Region in August 1999. The diabetes guideline will be introduced in the Western Region in late 1999. The guideline implementation process (shown in Figure 2) consists of the following components:

- **Practice guideline and metrics.** The official DoD/VA practice guideline and monitoring metrics are provided to the MTFs, including a summary list of the key elements of the guideline. The guideline expert panel also identifies additional metrics as important or useful for monitoring by treatment facilities that are working with the guideline.

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[1] The other two guidelines were for smoking cessation and hypertension. Subsequent guidelines focused on other health problems that are high volume/high cost for service delivery in the military and VA facilities, many of which are chronic conditions (e.g., asthma, diabetes, hyperlipidemia).

[2] Department of Defense and Veterans Health Administration, VHA/DoD Clinical Practice Guideline for the Management of Low Back Pain or Sciatica in the Primary Care Setting, Washington, DC, May 1999.

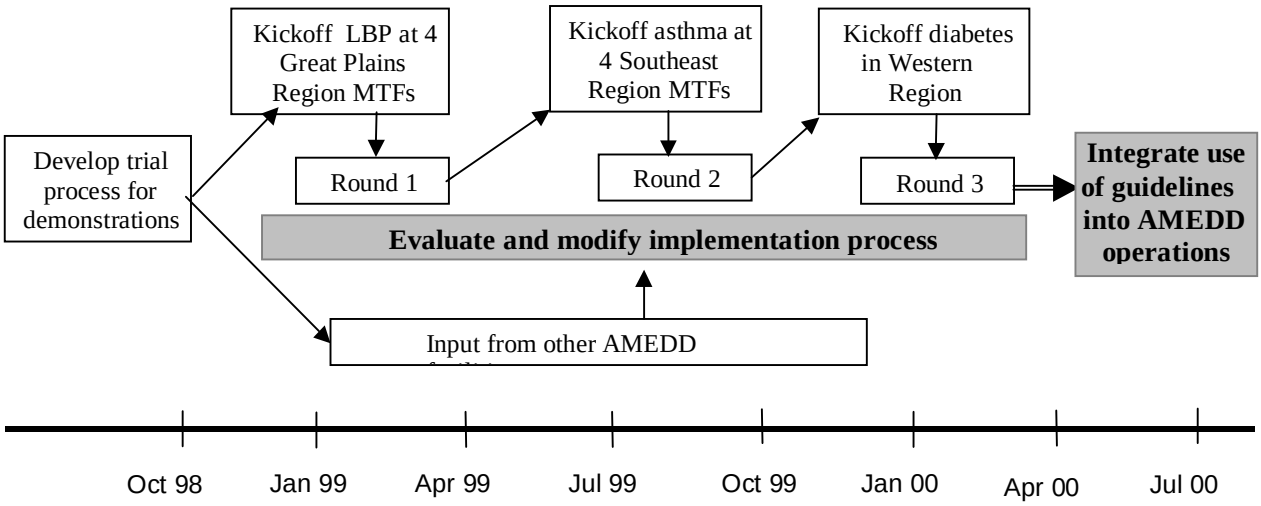


Figure 1. Diagram of the Demonstration Project

- **Guideline toolkit.** The Medical Command (MEDCOM) and the Center for Health Promotion and Preventive Medicine (CHPPM) collaborate in the development of a toolkit of materials to support the MTFs' guideline implementation activities (e.g., documentation forms, provider training videos, patient education materials, reminder cards).
- **Kickoff planning conference.** Guideline teams from the demonstration MTFs participate in a 2-day meeting to plan their implementation strategies and develop action plans.
- **MTF implementation activities.** Following the kickoff conference, the MTF teams carry out their action plans. They prepare monthly reports that summarize their recent activities, successes, challenges, and assistance needed to support their work.
- **Information exchange.** Teams are encouraged to share their experiences and build on each others' successes.
- **Monitoring of progress.** Monitoring of implementation progress is performed by both MEDCOM and the participating MTFs, using metrics that have been developed in either the DoD/VA guideline process or by the MTFs themselves. The MTFs are encouraged to establish measures for their key action strategies so they can assess their progress in making the clinical process changes they intended.

THE RAND PROCESS EVALUATION

To learn from the experience of the MTFs participating in the demonstration, the RAND team uses a participant-observer approach to exchange information and facilitate shared learning with the MTFs throughout the demonstration and evaluation process. The purposes of each evaluation are to:[3]

[3] We note that this report on the early experiences in the low back pain demonstration does not include findings on the last two purposes, which will be examined later in the demonstration.

- Document the actions and experiences of the Army military treatment facilities (MTFs) participating in the demonstration for practice guideline implementation,
- Identify areas where the policies, systems, and processes established by the AMEDD for guideline implementation can be strengthened,
- Compare the experiences of demonstration MTFs with other MTFs in the same region,
- Assess the degree to which demonstration sites are able to build on their experiences with the demonstration guideline to implement additional DoD/VA guidelines.

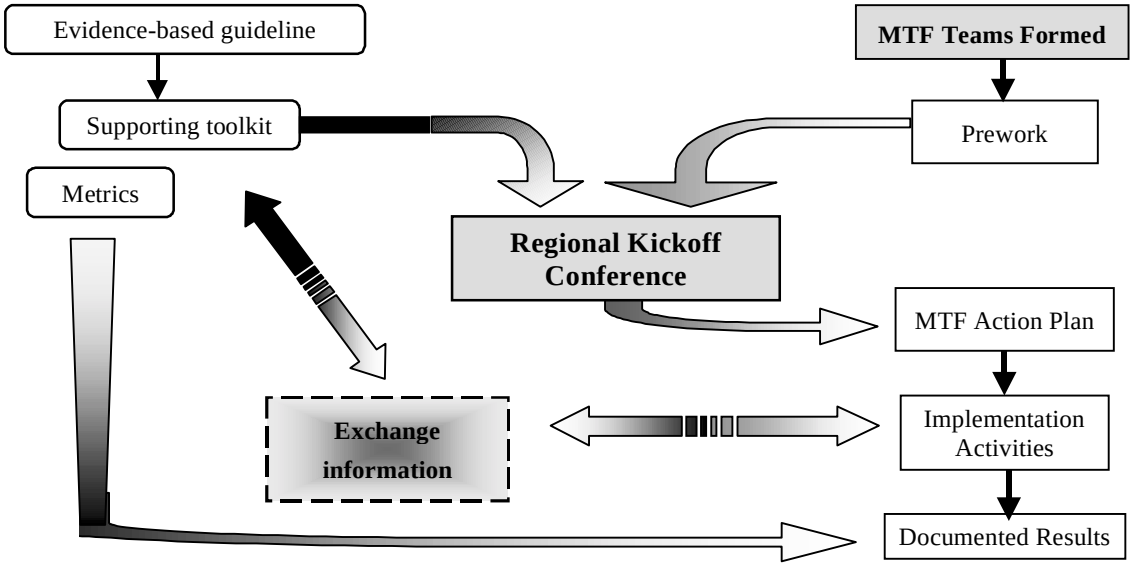


Figure 2. Guideline Implementation Process

The Process Evaluation Plan for Guideline Implementation Demonstrations, provided in Appendix C, describes our evaluation design and schedule and lists the questions to be addressed during the site visits. Three site visits are planned during the course of each demonstration: an introductory visit before the kickoff conference and two post-implementation visits, one at three to four months after guideline implementation begins at the MTFs and the other about six months later. During a post-implementation site visit, RAND staff members interview the MTF's guideline team as well as other individuals involved or affected by introduction of practice changes in response to the new guideline.

Diverse stakeholders influence progress in implementing practice guidelines, as do external environmental factors (e.g., deployments, changes in MTF command, other DoD health programs affecting care for dependents or retirees). Stakeholders of interest include the MTF command team, middle management, the clinical and administrative staff who are delivering care, and the patients obtaining that care. The members of the implementation team are important stakeholders who not only are serving on the team but also have other job responsibilities at the MTF. All of these stakeholders are considered in the evaluation.

In addition to the site visits, an ongoing reporting process is maintained and communication methods are coordinated to help sites obtain assistance from each other, MEDCOM, and RAND. The sites' monthly reports during the demonstration also document their

progress in carrying out or modifying the initial action plan they developed at the kickoff conference.

In the remainder of this report, we describe the early experiences of the demonstration participants in implementing the DoD/VA low back pain practice guideline, and we consider implications for strengthening implementation processes in the AMEDD. The second section describes the four MTFs participating in the demonstration and their baseline organizational climates for guideline implementation. The third section describes the activities undertaken by MEDCOM to support implementation of the low back pain guideline and presents feedback received from the MTFs on the guideline and the support materials developed to assist MTF implementation activities. In the fourth section, we describe the strategies and actions developed by the MTFs to integrate the guideline standards into their clinical care processes and their early progress in carrying out those strategies. The last section discusses lessons learned from the experiences of demonstration participants. Information generated from this evaluation is already contributing to strengthening broader AMEDD guideline implementation activities.

The first-round site visits were important sources of information for this evaluation. Summary reports of the site visits for the four participating MTFs are provided in Appendix D.

Section 2
THE LOW BACK PAIN DEMONSTRATION SITES

The Great Plains Region was selected for the low back pain guideline demonstration because of the size and diversity of the posts located in the region and the populations they serve. These posts provide basic and/or advanced training for active duty personnel, including field artillery, air defense artillery, and armored cavalry. One-third of the Army active duty personnel are stationed at Great Plains Region posts, and large numbers of military retirees and their dependents live within their catchment areas. Therefore, the Great Plains Region medical treatment facilities are serving patients ranging from soldiers in basic training to Medicare-eligible retirees and dependents.

Four MTFs in the Great Plains Region are serving as demonstration sites for implementation of the low back pain guideline:

- William Beaumont AMC at Ft. Bliss
- Evans ACH at Ft. Carson
- Darnall ACH at Ft. Hood
- Reynolds ACH at Ft. Sill

PROFILES OF THE DEMONSTRATION SITES

As shown in Table 1, the four MTFs represent diverse patient populations, facility sizes and service mixes. As Army community hospitals (ACH), Evans, Darnall, and Reynolds provide mainly primary care services with some specialty care. William Beaumont Army Medical Center (AMC) had a focus on specialty care services prior to 1996, but has been shifting to a mix of primary care and specialty care in recent years. The patient populations served by Darnall ACH and Reynolds ACH are primarily active duty personnel and dependents, whereas William Beaumont AMC services a relatively large retiree population, as does Evans ACH to a lesser extent. The ratios of retirees to active duty personnel range from a low of 0.96 at Darnall ACH to a high of 2.87 at William Beaumont AMC.

The four MTFs also vary in other clinical and educational activities. Darnall ACH and William Beaumont AMC have extensive medical education training. Evans ACH and William Beaumont AMC have Wellness Centers, and William Beaumont AMC was a test site for "Putting Wellness into Practice." Evans ACH and Reynolds ACH are sites for the DoD-Medicare Subvention Demonstration, in which the MTFs are enrolling and providing services to Medicare-eligible DoD beneficiaries. These two MTFs also have been Chiropractic Demonstration sites, which has changed their primary care service patterns. Sites vary widely in their prior experience with clinical guidelines or pathways. Access to and sophistication of computer support also varies considerably.

BASELINE CLIMATE FOR GUIDELINE IMPLEMENTATION

Among the factors that influence the extent to which a treatment facility achieves lasting improvements in its clinical care processes are several aspects of the organizational climate for guideline implementation. These include the attitudes of key stakeholders regarding practice guidelines, their motivation for using guidelines, and the nature of corporate cultures and quality improvement activities. If the MTF baseline operating climate is supportive, it will be easier for

the implementation team to carry out its action plan and achieve desired impacts on health care delivery and outcomes, and vice versa.

Table 1
Profiles of the Military Treatment Facilities Participating in the Low Back Pain Guideline Demonstration

	Evans ACH Ft. Carson, CO	Darnall ACH Ft. Hood, TX	Reynolds ACH Ft. Sill, OK	Beaumont AMC Ft. Bliss, TX
DMIS Number	32	110	98	108
Number of Beneficiaries				
Active duty	15,543	41,396	16,508	11,425
Active duty dependents	26,322	52,344	17,751	18,748
Retirees, dependents, and survivors	26,794	39,680	18,601	32,836
All beneficiaries	69,205	134,308	53,588	64,015
Retiree/active duty ratio	1.72	0.96	1.13	2.87
Inpatient Dispositions *	1,470	2,731	1,914	2,234
Same Day Surgeries *	631	1,423	1,180	2,065
Out-patient Visits *	166,418	256,500	158,499	118,188

NOTE: All data are from CEIS. Asterisked items are for the period October 98–March 99. All other data are from FY98.

To collect data on the baseline climates in the four MTFs in the demonstration, we asked the members of the MTF command teams and guideline teams to complete a survey containing well-established measures of motivation and attitudes toward quality improvement and health care corporate culture. The same survey will be administered again during the second round of post-implementation site visits at the end of the process evaluation, which will allow us to assess what changes in climate occurred during the demonstration.

The climate survey consists of 5 modules that address motivation for guideline implementation, supportiveness of climate, attitudes toward practice guidelines, hospital culture, and efforts to improve quality of care. Each module contains sets of items with scaled responses, and responses to these items are summarized to obtain overall scores for each climate component. For the module on motivation, respondents (members of command and guideline teams) were asked to rate the importance of each of 8 quality improvement factors, using a scale of 1 (not important) to 5 (extremely important). They also were asked to rate the current status of their MTF on each factor, also on a scale of 1 (poor) to 5 (excellent). The modules on climate for practice guideline implementation and attitudes toward guidelines contained 7 and 6 items, respectively. Refer to Appendix E for these items.

The baseline scores on the motivation, climate, and attitudes modules for the MTF command and guideline teams are presented in Tables 2 and 3. To protect privacy, neither the names of the MTFs nor the number of respondents in each MTF are provided. There were a total of 69 respondents, of whom 14 were members of MTF command teams and 55 were on the implementation teams. The teams ranged in size from 8 to 23 members.

The command teams and implementation teams had similar views regarding both the importance of the 8 quality improvement factors and the MTFs' current status in quality

improvement, but their views differed regarding MTF climate and attitudes toward practice guidelines (Table 2). Both groups gave moderately high scores for the two quality improvement measures, with scores of 35 (of a maximum of 40) for importance of improving quality and 32 to 33 for current status. The command teams had more positive views for the climate and attitude measures than did the implementation teams. Average command team scores for MTF climate and attitudes toward guidelines were 19.1 and 35.0, respectively, compared with 17.1 and 30.4 for the implementation team members. MTF teams (combined scores for command and guideline teams) appeared to have more favorable perceptions about quality improvement efforts than toward practice guidelines. In addition, statistically significant differences were found among the MTFs in their attitudes about guidelines.

Table 2
Baseline Survey Scores on Quality Improvement, MTF Climate, and Attitudes Toward Practice Guidelines

Respondent Group	Means (Standard Deviations) for Views on Quality Activities			
	Importance of Improving Quality of Care (Range 8 to 40)	MTF Current Status in Quality Improvement (Range 8 to 40)	MTF Climate for Guideline Implementation (Range 7 to 28)	Attitude Toward Practice Guidelines (Range 6 to 42)
All MTFs (4):				
Command teams	35.3 (3.7)	31.5 (6.3)	19.1 (4.0) *	35.0 (5.0) *
Implementation teams	35.4 (3.6)	33.4 (7.8)	17.1 (3.3) *	30.4 (5.8) *
Combined by MTF:				
Facility A	34.2 (3.0)	30.3 (5.8)	16.5 (2.5)	32.5 (4.5) *
Facility B	35.1 (3.9)	35.3 (6.7)	17.9 (3.6)	29.5 (6.9) *
Facility C	36.5 (3.4)	30.4 (9.7)	17.2 (3.3)	31.0 (4.4) *
Facility D	36.0 (3.4)	33.8 (6.9)	18.5 (3.8)	35.1 (5.0) *

* Difference significant at $p < 0.05$.

A motivation measure was derived for each implementation team member based on the concept that team members will be motivated to initiate guideline activities when they perceive that (1) their efforts will lead to successful guideline implementation, (2) successful implementation will lead to improved job performance, and (3) improved job performance will be instrumental in obtaining desired outcomes (e.g., career progress, patient outcomes). We calculated motivation scores using survey responses for three factors:[4]

Motivation score = (effort yields performance) x (performance yields outcome factor) x (importance of outcome factor)

Separate average scores were calculated for individual motivation and clinic/MTF motivation, as well as for a combined average score for overall motivation. For ease of interpretation, these scores were converted to percentages of the maximum possible score. The

[4] The factors are measured as agreement/disagreement that exertion of effort will help the individual or clinic perform consistently with the guideline (scale of 1 to 7), agreement/disagreement that their own efforts or overall clinic/MTF efforts will contribute to each quality improvement factor (scale of 1 to 7), and the importance of each factor (scale of 1 to 5).

individual and combined motivation scores for the four MTFs, shown in Table 3, varied from less than 60 percent to over 70 percent. These differences were not statistically significant, however. Considering the magnitude of the scores, the MTF teams were moderately motivated to pursue guideline implementation, but there did not appear to be overwhelming enthusiasm for the task.

Table 3
Baseline Motivation for Guideline Implementation by the Implementation Teams

Military Treatment Facility	Percentage of Maximum Scores for Perceptions of Motivation by the Guideline Implementation Teams †		
	Individual Motivation	Clinic/MTF Motivation	Combined Motivation
Facility A	60.8	61.6	61.2
Facility B	63.7	64.5	64.1
Facility C	71.8	72.2	71.8
Facility D	56.7	59.6	58.4

† The index scores have a maximum possible range of values from 1 to 245. The results reported are expressed as a percentage of the maximum score of 245. Differences among the MTFs are not statistically significant.

Results for the last two climate survey modules - corporate culture and treatment facility quality efforts - are presented in Table 4 (refer to Appendix E for the survey items for these modules). These dimensions may be viewed as important components of the internal structural environment of the MTFs, within which the guideline teams work as they pursue guideline implementation. The corporate culture measures show respondents' perceptions regarding the relative mix of their MTF's cultures among four distinct types, with the total summing to 100 percent. The culture types are:

- *Group* - characterized by a sense of affiliation, teamwork, and participation;
- *Developmental* - emphasizes risk-taking innovation and change;
- *Hierarchical* - associated with bureaucracy;
- *Rational* - emphasizes efficiency and achievement.

The measures of organization quality efforts are index scores for 6 dimensions of quality activities, consisting of 4 or 5 survey items each (scale of 1 to 5):

- *Leadership* - extent of the command team's personal leadership and involvement to create and sustain quality values, and the extent to which these values are integrated into the MTF's management system (5 items);
- *Information and analysis* - the scope, management, and use of information to drive quality excellence and improve performance (4 items);
- *Employee training* - extent of provision of education and training for quality improvement efforts (4 items);
- *Employee involvement* - extent of employee involvement and empowerment in the MTF's quality planning efforts (5 items);
- *Quality results* - extent of measurable improvement in quality, MTF operational performance, and supplier quality (4 items);

- *Customer satisfaction* - assessment and meeting of customer requirements and expectations, including patients, employees, and physicians (5 items).

According to the corporate culture results in Table 4, the implementation teams differed in their perceptions of the way their MTFs do business. All of the facilities were perceived to have cultures with a mixture of the 4 types, yet only the rational culture type has a substantial share of the mix for all the MTFs. Two teams perceived their facilities as having more hierarchical cultures, whereas the other two had a stronger group culture component, and these differences were statistically significant. The developmental culture was represented relatively weakly in the perceptions of these MTF teams.

Despite their perceived differences in culture, the MTF implementation teams had fairly similar perceptions regarding the extent of their organizations' quality efforts. All of the MTF teams tended to score leadership, information and analysis, and customer satisfaction high, and some of the teams also scored employee training and involvement high. Differences in the team scores were statistically significant only for the leadership factor.

Table 4
Baseline Survey Scores on Corporate Culture and Organization Quality Efforts for the Implementation Teams

	Mean Scores - Corporate Culture and Organization Quality Efforts			
Component	Facility A	Facility B	Facility C	Facility D
Corporate Culture				
Group	28.4 *	19.9 *	13.6 *	33.6 *
Developmental	21.4	17.2	15.1	18.0
Hierarchical	11.8 *	34.1 *	41.5 *	24.4 *
Rational	38.3	28.8	29.8	24.0
Total:	100.0%	100.0%	100.0%	100.0%
Quality Efforts **				
Leadership (5)	19.1 *	20.4 *	15.9 *	20.9 *
Information and analysis (4)	19.4	18.3	16.8	21.6
Employee training (4)	13.3	16.6	14.9	13.8
Employee involvement (5)	16.8	19.0	15.7	16.5
Quality results (4)	11.6	14.3	13.6	18.9
Customer satisfaction (5)	17.3	17.4	17.6	18.8

* Differences across MTFs significant at $p<0.05$.

** Factor scores are sums of the scores on either 4 or 5 included items, as noted in ( ) after the factor name. Scores for 4-item factors are adjusted to equal 5-item factor scores by multiplying by 5/4. A maximum score of 25 therefore is possible for each factor.

The climate survey results indicate that the MTF implementation teams embarked on the low back pain guideline demonstration with a high level of commitment to quality improvement and with internal corporate environments that tended to support guideline implementation efforts. Yet at the start of the demonstration, the MTF teams appeared to be only moderately positive in their attitudes toward practice guidelines and their motivation to use them to bring about desired quality improvements. These views could reflect a combination of some natural resistance by clinicians to the concept of practice guidelines, the uncertainty of participating in the demonstration, and concerns about increased workload.

Section 3
PREPARATION AND SUPPORT FOR GUIDELINE IMPLEMENTATION

This section contains the findings of the process evaluation with respect to the preparation and early support for implementing the low back pain guideline. First, we describe the activities undertaken by MEDCOM and RAND to prepare for and assist the implementation activities of the demonstration MTFs as well as those of the other MTFs in the Great Plains Region. Then we summarize the feedback received from the four demonstration sites about these processes and products: the guideline itself, the implementation kickoff and subsequent processes, the toolkit of support materials, and methods tested for information exchange among the sites.

PREPARING FOR IMPLEMENTATION

With the intention of initiating implementation activities for the low back pain guideline in January 1999, MEDCOM scheduled the kickoff conference in November 1998 for participating MTFs to develop their action plans. This conference date closely followed the expected date of completion of the DoD/VA practice guideline. In retrospect, this tight schedule did not accommodate the amount of time required to complete the guideline and to develop the toolkit materials for implementation support. An important consequence was a delay in the implementation schedule for virtually all participating MTFs until March 1999 to allow additional time to finalize the guideline and complete the toolkit. The kickoff conference was not re-scheduled to a later date and, as a result, the sites lost momentum because they could not start immediately on activities to implement the action plans they had prepared at the conference. Despite these challenges, the sites have made progress in integrating the guideline's practice standards into care for low back pain patients, as discussed in Section 4. As the guideline was finalized and toolkit materials became available, the sites incorporated these materials into their activities.

Getting Started: The Kickoff Conference

Each guideline implementation demonstration is initiated with a kickoff conference held in the region where the demonstration is being conducted. The guideline teams for the participating MTFs come together for 2 days at the conference to build their initial action plans for making the guideline standards an integral part of their clinical practices.

In preparation for the demonstration, each MTF is asked to identify a guideline champion, members of its guideline team, and a facilitator with responsibility for guiding the team's planning process and implementation activities. Ideally, the team should consist of 8 to 12 people who represent the clinical and administrative functions involved in providing care for the condition being addressed by the practice guideline and who should be drawn from the mix of clinics operated by the MTF. For low back pain, the team membership should include representation from primary care physicians, physical medicine and rehabilitation physicians, physical therapists, chiropractors (if offered at the MTF), nursing staff, medics, clinic managers, and clerical staff.

The kickoff conference for the low back pain demonstration was held on 19-20 November 1998 in San Antonio, TX. A total of 60 individuals from the four demonstration MTFs participated in this planning conference, and 15 individuals from other MTFs in the region

attended as observers. The meeting began with a half-day of introductory presentations on the low back pain guideline and a review of the planning tasks to be undertaken by the MTF teams at the meeting. The teams were also introduced to the concept of approaching organizational change as a series of small-scale tests leading to full-scale implementation. The majority of the meeting time was used by the teams to develop their implementation action plans. The Regional Commander attended the end of the conference, at which time each MTF team briefed the Commander on its action plan. These action plans, with subsequent revisions based on field experience, have guided the implementation activities of the demonstration MTFs, and they are used as the basis for monthly reports submitted by the site on their implementation progress, successes, and challenges.

The four MTF teams attending the kickoff conference varied in size, reflecting their respective clinic structures and service mix. For example, the Ft. Hood team had 25 people because they felt it was important to have representation from its 8 troop medical clinics (TMC) and hospital-based clinics. The Ft. Bliss team had 16 people who represented a mix of primary and specialty care services related to low back pain care. Forts Carson and Sill had smaller teams (10 from Ft. Carson and 9 from Ft. Sill), reflecting their smaller number of TMCs and focus on primary care services.

The guideline team planning process was guided by the facilitators designated by the participating MTFs. A session was held with the facilitators on the afternoon before the conference to help prepare them for their roles in the teams' planning activities during the conference. The meeting agenda was discussed, details were provided on the action plans to be developed, the planning support materials were introduced, and questions from the facilitators were discussed.

The approach taken in the planning materials for this meeting was to "walk" the teams through a structured set of planning steps using specific group facilitation techniques. Worksheet templates were provided that, when completed by the team, constituted a completed action plan. The worksheets were provided in paper and electronic format, including Word document tables and PowerPoint slides. The PowerPoint slide formats were provided to assist the teams in preparing their briefings to the Regional Commander at the end of the conference.

The Low Back Pain Guideline Toolkit

A toolkit consisting of materials and information to support implementation of the low back pain guideline was developed and distributed to the demonstration MTFs as well as to other MTFs in the Great Plains Region. The toolkit items were developed collaboratively by MEDCOM and the Center for Health Promotion and Preventive Medicine (CHPPM). The first three tools to be completed were a test documentation form (MEDCOM Form 695-R) for low back pain patients that is intended to substitute for the SF-600 documentation form, a patient education pamphlet for low back pain self-care, and a video for training providers on the low back pain guideline as part of their CME activities. Other toolkit items include a patient education video, a pocket card containing the key points of the low back pain guideline, and a one-page laminated 8-1/2" x 11" sheet presenting the guideline algorithm. The Form 695-R and pocket card are presented in Appendix F.

The MEDCOM Form 695-R is a two-sided, one-page documentation form with three sections. The first section covers vital signs, and is to be completed by clinic staff at the start of

the clinic visit. The second section, to be completed by the patient, covers symptoms, pain level, work history, and stress factors. The last section, to be completed by the physician during the visit, covers medical history, physical assessment, diagnosis, and treatment plan. All checks for "red flag" conditions specified in the guideline are included in the history and physical assessment portions of the form. A draft documentation form was reviewed with the MTF teams at the November kickoff conference. The form was made available to the MTFs in January 1999.

The patient education pamphlet outlines low back pain treatment options associated with specific conditions and, where appropriate, the actions that patients can take to manage their condition. The pamphlet discusses over-the-counter medications, explains self-administered treatment without medication, and describes a number of exercises that the patient can practice regularly to minimize recurrence of low back pain. A draft pamphlet also was ready for review with the demonstration teams at the kickoff conference. Copies were distributed to the MTFs in March 1999.

Because of the extremely short time line established for starting this demonstration, the other toolkit items were completed at various times after the November kickoff conference. Work on the CME video began immediately following the conference, with delivery of a first version in January 1999. This version had substantial technical deficits, however, because it was produced quickly in a poor taping environment. A second, improved version was produced and distributed to the sites by April 1999. A patient education video produced by a private firm also was distributed to the sites in January 1999, but the sites gave the video negative reviews. In response to this feedback, a different video was acquired from another firm, which was distributed by May 1999. The laminated algorithm sheets and pocket cards had not yet been distributed to the sites by the time of the first post-implementation site visit for the process evaluation.

The concept and design of an implementation toolkit evolved during the early months of the low back pain demonstration, as the participating MTFs offered feedback to MEDCOM that they desired such support and materials. This process also led to the formalization and refinement of the role of CHPPM in toolkit development, such that CHPPM has taken the lead in developing toolkits for the asthma and diabetes demonstrations, and also will do so for other DoD/VA guidelines. The Pharmaco-Economic Center (PEC) and Logistics (with responsibility for ordering supplies) also have become involved in development of the asthma and diabetes toolkits, both of which involve drug formulary and acquisition of specific equipment.

Information Exchange

Anticipating that the demonstration MTFs would generate creative approaches to implementing the low back pain guideline, we explored mechanisms to support information exchange among the MTFs to help them share their experiences and learn from each other. These include e-mail and internet-based systems as well as periodic audio and video conferences. We perceived a value in using a variety of techniques to reinforce messages and share information, which also allowed us to learn which techniques are most useful for the participants.

One potentially powerful communication tool is the electronic listserver, which can be established as a free-standing e-mail system or combined with a web-based bulletin-board. With an e-mail-based listserver, the participants are signed up as members and can exchange e-mail with all other members by addressing a single message to listserver's e-mail "alias." The listserver can be linked to a web-based bulletin board so that members automatically receive new bulletin

board postings as e-mail and e-mail responses to messages are automatically posted under individual topics or "threads" on the bulletin board. The listserver members can also have access to a homesite for setting up live chat rooms on a specified topic.

To guide the design of a listserver system, participants at the low back pain kickoff conference were asked to complete a brief survey on their current use of electronic media (e-mail and the web) and their interest in various listserver features. The results of that survey highlight the importance of the e-mail component. As shown in Table 5, almost three-quarters of the participants have regular access to an e-mail system, but less than 10% have regular access to the internet. Of those with access to e-mail, almost 85% use e-mail frequently. By contrast, only 37% of those with access to the web use it frequently. Over 80% of the participants reported they had experience with some form of listserver. Use of e-mail listservers was more common, with over 75% having used an e-mail system compared to almost 29% having used a web-based system.

Almost two-thirds of the demonstration team members reported they would prefer to use an e-mail system for communications during the demonstration, as shown in Table 6. When asked if they would use a system established in each format, 80% of them reported they would use e-mail and 57% reported they would use a web-based system. The demonstration participants also provided some comments that should guide the design of a listserver, which are listed in Table 7. A desire for a fast, easy-to-use system is revealed in these comments. In addition, some concerns are expressed about limits to the current capabilities of their systems, which may restrict listserver applications.

Table 5
Experience of Demonstration Participants with Electronic Media

	E-mail	Web System
Have regular access to system	73.0%	9.2%
Frequency of use		
Frequently	84.6	36.7
Periodic	9.2	23.3
Seldom/never	6.2	40.0
Participated in listserver on system (At least one form = 80.3%) *	75.8	28.8
Number responding	65	60

* Use of a news group listserver was reported by 7.6% of respondents.

Table 6
Listserver Preferences of Demonstration Participants

Would use listserver to exchange information on implementation?	E-mail	Web-Based
Yes	80.0%	57.1%
No	1.5	8.9
Not sure	18.5	33.9
Total	100.0	100.0
Which system is preferred?	61.5	36.9

Table 7
Comments by Demonstration Participants on Listservers

Written Comments
Use CHCS for the listserver (from 3 people)
Phase in from e-mail to web-based
It should be fast, with command emphasis
Web is constant; e-mail is not
Keep it simple
Web login is too much work
Only use for communication
Place the progress report on the server
Web may be better; but only have e-mail experience
Web system format not clear

An early decision was made to use the AMEDD Knowledge Management Network (KMN) as the primary electronic communications platform for the practice guideline demonstrations. Operated by the AMEDD for educational activities, the KMN is a web-based system that supports closed communities, chat room capability, bulletin boards, listserver e-mail archives posted by topics, and a library for posting related materials. The decision to use KMN was made on the day before the kickoff conference for the low back pain demonstration, before obtaining the survey results described above. A KMN homesite for the low back pain demonstration was established immediately after the kickoff conference. The demonstration MTFs were notified about the homesite location in early 1999, and they were given instructions for registration and navigation on the KMN system.

MEDCOM decided to use the KMN system for several reasons, despite the stated preferences by conference participants for an e-mail based system. First, the leadership preferred, wherever possible, to use existing AMEDD capabilities for the guideline implementation activities.[5] Second, KMN offered a sophisticated set of functions to support various approaches to communications and sharing of materials, if the MTF staff chose to take advantage of this sophistication. According to KMN staff, the functions included an e-mail component that would

[5] The alternative considered was to establish an e-mail listserver on RAND's system as a test application, which then would be moved over to an AMEDD system after gaining experience with this model.

send posted messages to all individuals registered in the demonstration's KMN community. Finally, this demonstration offered the KMN leadership an opportunity to test the system in a field application that differs from its traditional educational uses, to help extend its use into other areas.

Metrics and Monitoring

Because the DoD/VA guideline team did not complete its work on the low back pain guideline metrics until April 1999, it was not possible to provide this information to the demonstration sites early in their implementation activities. The DoD/VA Working Group has established the DoD/VA low back pain metrics based on the recommendations of the expert panel, and the expert panel's report was distributed to all Army MTFs in September 1999. In addition to its recommended metrics, the report presents several other sets of metrics that may be used by MTFs to monitor their progress in guideline implementation.

FEEDBACK FROM THE DEMONSTRATION SITES

The early implementation activities of the demonstration sites provide useful evaluation information on the low back pain guideline itself as well as on the structure, processes, and support materials needed to assist the MTFs in their implementation activities. In the first post-implementation site visits held during May and June 1999, sites were asked to provide feedback on various aspects of the implementation process. MEDCOM is using this information to revise the process and tools specific to low back pain guideline implementation. In addition, this knowledge has been transferred to the start-up of the asthma and diabetes guideline demonstrations, to improve the planning process and materials, implementation toolkit, and metrics.

Sites' Assessment of the Low Back Pain Guideline

Although the low back pain guideline has been in use for a relatively short time, clinical staff who have worked with the guideline were generally positive about it. On the logic and content of the guideline, comments ranged from "very good" to "consistent" to "no objections." Specific comments offered said that the guideline:

"…is an opportunity to emphasize prevention and patient self-management"

"…will minimize referrals to physical therapists and specialists"

"…gives me more autonomy to order further treatment after 6 weeks"

"…provides more leeway to move to MEB"

"…Takes the burden away off doctors of doing something different from other doctors"

"…will increase the quality, continuity, and consistency of care."

One site inserted clarifying notes in the guideline algorithm to interpret how the guideline is being applied to local practice. All of these notes, which were consistent with the guideline annotations, make it easier for clinical staff to use the algorithm. For example, "back class" was noted as a treatment option in box 16 that focuses on gradual return to activity for acute patients (refer to the guideline algorithm in Appendix A). It also inserted "physical therapy" as an explicit treatment option in box 17 that focuses on continuing or modifying treatment for acute patients whose back pain is not getting better. Finally, it added a note next to boxes 29, 32, 33 to indicate that these patients should be referred to the Physical Medicine and Rehabilitation (PMR) clinic for

consultation. The PMR clinic has been designated as the gatekeeper for triaging patients and referrals to specialists (discussed further below under "Effects on Clinical Practices").

Physicians also offered suggestions about presentation of the guideline package. The full guideline document, including the algorithm and annotations, was considered too large and unwieldy for any use other than in the initial training session. The primary care physicians want summary information that is contained on one sheet and/or pocket card. If need be, the algorithm should be broken down into several discrete parts to keep each part to one page. The low back pain guideline, for instance, could be presented in two parts, one for acute and one for chronic cases. Guideline materials also should focus on key items from the perspective of a primary care provider, rather than a specialist.

The following substantive issues were raised about the applicability of the guideline for basic trainees, multiple ailments cases, and the timing of when to refer chronic low back pain cases to the MEB/PEB process.

Basic Trainees. One site, which serves active duty personnel in basic training, reported that the conservative treatment component of the guideline is not appropriate for basic trainees because it calls for 3 to 6 weeks with little medical intervention. Physicians reported that their goal in treating basic trainees is to return them to training as soon as possible. The key question physicians ask is "If I let this patient return to basic training with the pain, will it harm her/him?" Their challenge is to answer this question correctly to avoid both compromising the start of soldiers' military careers and exacerbating patients' physical problems. In addition, if back pain in basic trainees is a common occurrence, it also raises the question of how the basic training program might be modified to reduce the incidence of training-induced back injuries.

Patients with Multiple Ailments. Several physicians reported that the guideline is difficult to apply to patients with multiple ailments, which reportedly occur more frequently among retirees and family members than among active duty personnel. Low back pain may not be reported as the ailment that brought the patient to the clinic, and the patient may mention it only during the visit. In this case, the physician will make a low back pain diagnosis, but may not fill out a Form 695-R. One of the sites decided not to use the low back pain guideline for retirees and family members, with the rationale that the majority of these patients have multiple ailments.

Timing of Referrals to MEB. Physicians are uncertain when to refer chronic cases for MEB review after the first 6 to 9 weeks of treatment. Currently, they typically wait 6 months before MEB evaluation. Physicians would welcome more specific guidance about when to make such referrals. They also believe this guidance should be provided outside of the formal practice guideline, and it should allow flexibility to treat differently the soldiers who are committed to the Army and those who may want to leave. Two related issues were also raised. In addition to MEB guidance, sites want more clinical guidance about what to do with chronic low back pain patients who still have pain, but no radiating pain and no neurological symptoms. They also have identified an apparent conflict between the DoD/VA low back pain guideline standards and the Army disability requirements, most especially the PEB process, which should be reconciled.

The Planning Process and Kickoff Conference

Information about how to improve support for the MTFs as they develop their implementation action plans was obtained from three basic sources. The first was the evaluation of the kickoff conference by the participants, which they provided on the conference evaluation

forms. The second was review of the sites' initial action plans to identify areas where training and support materials for their planning methods could be strengthened. The third was feedback during the first post-implementation site visit about their experiences in carrying out planned actions and modifications to their initial strategies.

Conference evaluation. Overall, MTF participants found the planning activities at the kickoff conference to be useful. Responding to a question about their expected use of conference information in their guideline activities, 48% of the participants said they would use 100% of what they learned, and an additional 38% said they would use 75% of what they learned. The participants were asked to rate the usefulness of several components of the planning process they undertook to build their action plans, using a scale of 1 to 10 (with 10 being highest). The sites scored all of the components between 7 and 9, on average, although they varied widely in the importance they placed on each component.

Features of the conference that the participants liked best included the guideline itself, the conference notebook, and group sessions. Features liked least included the lack of preparation opportunity before the meeting and the confusing organization of the conference notebook. Suggestions for improvement to the conference included provision of materials before the meeting, better explanation of the purpose of the conference, and more emphasis on practical application of the guidelines. Some of these responses highlighted areas for needed improvement in the conference materials, which were undertaken during preparation for the second (asthma) demonstration. Others reflect the rapid schedule driving the low back pain demonstration, which did not allow time for full preparation before the conference.

Action plans. To develop action plans at the kickoff conference, the MTF teams used different planning methods that reflected the differences in the size and composition of their teams as well as their experience with such planning activities. The action plans they generated tended to focus on activities to introduce the guideline at the MTF clinics and to train physicians in its contents. Less attention was given to actions to change the clinics' existing structures or processes, although the sites did plan to implement patient education and the MEDCOM Form 695-R. These findings pointed toward the need to emphasize desired planning products (implementation strategies and actions), while focusing less on the specific steps in the planning process, to allow for flexibility in planning approaches.

Plan modifications. Most of the demonstration MTFs reported that they made some changes to their implementation team membership, action plan, or both, following the kickoff conference. Most of these changes were expected as the results of learning from field experience, as their early implementation activities helped identify the need for new skills on the team or different approaches to actions. However, discussions with the implementation teams indicate that the amount of plan revisions might be reduced if the planning support materials gave more explicit examples of the types of actions the MTFs should consider for their action plans.

Site's Assessment of Existing Toolkit Items

During the site visits, we sought feedback from the sites on the usefulness of the items in the low back pain guideline toolkit and on how the sites used them in their implementation activities. Perhaps the most consistent feedback received was dissatisfaction with the delays in providing the toolkit items to the sites. The sites found it difficult to pursue meaningful implementation activities until the key toolkit items became available. Even following the change

to a March start-up date, delays in generating some toolkit items continued, as discussed above. The sites provided a number of suggestions for improvements to the existing toolkit items, which are reported here.

MEDCOM Form 695-R. This documentation form (See Appendix G) was reported to be the most important item in the low back pain toolkit. Physicians interviewed generally liked the form, but many of them indicated that it did not fill all of their needs. Therefore, some sites are continuing to use the SF-600 with the Form 695-R as an overlay, rather than replacing the SF-600 as intended. The most frequent suggestion for revision was to provide more space for notes in the history, diagnosis, and treatment plan parts of the form. Yet physicians also were vehement that the form should be no longer than its current size of one, two-sided page. Several other specific suggestions were made for additions and deletions to improve the form:

- Vital Sign: add a box for allergies and Waddell's signs
- Patient identification:
  Add the social security number
  Add space to identify work unit (location)
- Diagnosis: add a stick figure to locate pain
- Treatment Plan:
  Delete the medications boxes; leave line for write-in
  Add a box for CT (next to MRI)
  Add referral to back class
  Add space for results from lab tests.

Physicians who primarily care for active duty personnel raised a concern that some of the questions asked of patients were too leading. For instance, they thought that asking "whether (the patient) has experienced pain, numbness or tingling in either legs" may encourage soldiers who want to get out of an undesirable assignment to overstate their symptoms. The high frequency of physicians' concerns about possible malingering suggest that this phenomenon may be widespread. It is also consistent with the desire of physicians to get more guidance about the proper timing for referral of chronic cases for MEB review.

While the Form 695-R was generally thought to be well-suited for the initial encounter, physicians thought it was too repetitive for subsequent visits. They suggested that a simpler form be developed for follow-up visits. Some physicians indicate that they use changes on the forms' pain scale as one indicator of change in a patient's condition, which a follow-up form could capture. As of now, only one site is currently requiring that the form be filled out at both initial and follow-up visits. This site reportedly has difficulties with having patient charts readily available, or alternatively, having the initial Form 695-R available in patients' charts. Requiring that a new form be completed at each visit ensures that the physician has at least some basic information about the patient.

Provider Education (CME) Video. As discussed above, two versions of the CME video were produced, with the later version improving upon the quality of the first one. Two sites reported they used the original version for physician education so they could get started with implementation, and then switched to the new version when it was available. One of these sites turned down the sound volume and used only the video portion, with one of their physicians giving the briefing commentary.

The sites generally found the step-by-step review of the low back pain algorithm and the demonstration of the physical exam to be helpful, and they reported that both of these video components were well received by their physicians. Some felt that the introductory portion of the guideline briefing could be shortened or eliminated. Some primary care physicians thought that the physical exam was targeted too much at specialists, and requested "highlights" to guide primary care providers on the most critical parts of the exam. The third part of the video, which presented a review of studies on the psychosocial aspects of low back pain, was ignored by all of the sites as being too academic.

Patient Education Pamphlet. Physicians, nurses, aides, and medics universally praised the "Managing Low Back Pain" pamphlet for patient education, and they reported that the brochure also has been well received by patients. No suggestions were made for improvements to the pamphlet. The sites are using the patient pamphlet in many different ways, depending on their mix of clinics and guideline implementation strategies. Most clinics hand out the pamphlet to low back pain patients as they come in for care. In some sites, a clinical staff person (physician, nurse, physician assistant, or medic) reviews the self-care and exercise instructions with the patient. The pamphlet is also available in waiting rooms. In some sites, the pamphlet is used as part of back class, wellness center activities, or occupational health clinics.

Additional Toolkit Items Suggested

The demonstration sites made several suggestions to add to the arsenal of low back pain toolkit items to assist in the implementation of the guideline:

Standard Profile Form. When an active duty soldier has a health problem that limits his/her ability to perform normal duties, a provider writes a Temporary Profile specifying restrictions on the soldier's duty functions until the problem is resolved. The demonstration MTFs reported that profiles given by physicians for active duty personnel with low back pain vary substantially. One site developed a standard profile form that specifies a set of restrictions that are appropriate for low back pain, and MTF physicians reported that this form functions well for 90 percent of the MTF's cases. Modified profiles can be done for the remaining cases by noting changes on this standard form. This MTF reports that use of the standard profiling form has reduced the number of "dead man" profiles that restrict all activities. Some physicians at other sites indicated they would benefit from having available a standard profile form.

Standard Back Class Education Model. One site has developed a "model" patient education class for acute low back pain patients, for use by its TMCs and clinics. The model provides guidance on the class content and supporting materials (such as a video) that help demonstrate some of the exercises for preventing recurrence of low back pain. Such a model could assist other MTFs in implementing similar patient education classes.

Training Material for Nurses and Administrative Staff. None of the demonstration sites has engaged in formal strategies to train nurses and other staff on the purpose of the guideline and their role in supporting implementation. The result has been some resistance by these staff to new roles expected of them, in some cases leading to uneven implementation of procedures regarding use of form 695-R and patient education material. Some sites would welcome material that could be used to introduce the logic of the guideline and show the roles of clinical and support staff in helping to implement it, which could take the form of a video or written protocol.

Posters. One site has successfully used 11" by 13" posters showing guideline algorithms for placements on walls. They are effective visible reminder of the guideline to all staff in a TMC or clinic.

Information Exchange

The KMN community site for the low back pain demonstration was set up in December 1998 with a node manager designated to oversee the site and education to be provided to demonstration participants on use of the KMN. The original intent was for the node manager to perform the registrations for all individuals, to make their participation as easy as possible, but it was learned that the KMN system design requires each person to carry out his/her own registration. Therefore, a list of the team members for the MTFs was entered into the site records, and instructions for KMN registration were sent by e-mail to the MTF teams. Registration was found to involve a lengthy series of steps to first register on the KMN and then activate a subscription to the community site within the KMN. In addition, those individuals who attempted to complete their registration reported that they found the process to be complex and confusing.

Fewer than 20 demonstration participants chose to register on KMN, and fewer than 5 participants used the community site more than 3 or 4 times. During the site visits, MTF team members stated that the KMN was difficult to use and required too much time for the benefit of the information they could obtain from it. This system did not provide the easy-to-use communication mechanism that the e-mail survey conducted at the kickoff conference indicated would be necessary to achieve participation in electronic information exchange. Physicians in particular highlighted that their busy schedules allow them very little time to spend in pursuit of information, so they will not use anything that is not easy.

Other methods used for information exchange during the early months of the demonstration included teleconferences, videoconferences, and the site visits themselves. The implementation teams varied in their reported desire for ongoing information exchange, yet when offered the opportunity, participants at every site appeared to be interested in learning what the other sites were doing in their implementation activities. The role of MEDCOM in communicating this information has helped to make new ideas available to each of the sites, and MEDCOM plans to continue this communication strategy.

Section 4
IMPLEMENTATION STATUS AFTER THREE MONTHS

In this section, we present findings from our first post-implementation site visits regarding the status of the four demonstration sites in implementing the low back pain practice guideline. First, we describe the implementation strategies used by the sites. Second, we discuss how far the sites have progressed in carrying out their strategies. Third, we outline some of the factors that appear to have affected the sites' implementation progress. Finally, we identify possible effects of the guideline on sites' clinical practices and outcomes.

APPROACHES TO IMPLEMENTATION

There are many similarities in the way the four sites approached implementation of the low back pain guideline. The extent of actual implementation activities varied, however, depending on local priorities, resources available, and prior experience with guidelines. Provided in Table 8 are summary profiles of the implementation team membership, strategies and action plans, and implementation activities for the four MTFs participating in the demonstration. We discuss each of these implementation components below.

Organizing for Implementation

Planning for implementation of the low back pain guideline began at the demonstration kick-off conference, as described in Section 3. All of the sites' action plans emphasized educating providers on the key elements of the guideline, with less attention given to actions to change clinic procedures. The sites varied in the time they planned to spend on training providers, ranging from 1 to 6 months of elapsed time. For monitoring strategies, the sites had similar plans to monitor clinic visits and referral patterns to physical therapy, MRIs, and MEB. In addition, one site planned to review temporary profiles and another planned to monitor referrals to back pain classes. The sites also planned to begin monitoring early, to be continued on an on-going basis.

Once implementation activities began, the sites generally made few changes to the strategies and actions in their original action plans. The timing of implementation, however, changed substantially for all of the sites when the official start date for implementation shifted from January to March 1999 (see Section 3). Three of the four sites started to introduce the guideline by March, and the fourth site began by late April.

The Implementation Teams

The demonstration sites' guideline implementation teams are playing a major role in the implementation of the low back pain guideline. At two of the sites, the implementation teams were restructured to reduce their sizes and to ensure that the key disciplines for the low back pain guideline were represented. Three implementation teams have from 7 to 11 members, which experience has shown to be optimal to generate effective group cohesion. The fourth team, Ft. Hood, is the largest of the sites and currently has a 19-member team. Although this team is large, the presence of a guideline "champion" from each of Ft. Hood's eight TMCs and clinics has facilitated the site's decentralized approach to implementation, as discussed below.

Table 8
Summary of Implementation Strategies and Activities by MTFs in the Low Back Pain Demonstration

Implementation Characteristics	Beaumont Ft. Bliss	Evans Ft. Carson	Darnall Ft. Hood	Reynolds Ft. Sill
Implementation Teams				
Number of members	7*	10	19	11*
Facilitator	✔	✔	✔	✔
Administrative staff		✔		✔
Primary physician	✔	✔	✔	✔
Physical therapy	✔	✔	✔	✔
Occupational health	✔			✔
Nursing			✔	✔
QM/UM	✔		✔	✔
Emergency room				✔
Initial Action Plans had:				
Provider training	Yes	Yes	Yes	Yes
Change clinic procedures	No	Yes	No	Yes
Plan to monitor	Yes	Yes	Yes	Yes
Implementation Began:	March	March	April	March
Implementation Strategies	Comprehensive, balanced between primary and specialty care	Targets AD personnel only	Emphasizes patient self care and education	Comprehensive, but emphasizes primary care
Highlights of Implementation Actions	Referral gatekeeper, manipulation	Patient education, MEB referrals	Back class for first-visit patients	Form 695-R for all visits
Provider Training				
Location	Centralized at hospital	Decentralized at 4 TMCs and clinics	Decentralized at 9 TMCs and clinics	Centralized at hospital
Duration of training				
▪ Less than ½ day	✔	✔	✔	
▪ ½ day				✔
Share of providers trained	80%	65%	60%	100%
Trained support staff	No	No	No	No
Form 695-R				
Pre tested use of form	No	No	No	Yes
Use 695-R	Overlay to SF-600	Overlay to SF-600	Overlay to SF-600	Replace SF-600
Use 695-R for each follow-up visit	No	No	No	Yes
Education for First Visit Patients	Hand out, review education pamphlet	Hand out, review education pamphlet	Refer all new patients to Back Class	Hand out, review education pamphlet

* The size of the team membership was reduced following the kickoff conference.

Primary care providers from hospital clinics and TMCs dominate the composition of each site's implementation team. Also, all teams have a representative from physical therapy and representation from quality or utilization management. Two teams have added representation from occupational health. Nursing and administrative staff are unevenly represented on the teams. Specialists—orthopedics, chiropractors, neurosurgeons—typically are not represented on the sites' implementation teams.

Implementation Strategies

The demonstration sites used quite distinct strategies to implement the low back pain guideline. Two sites implemented the guideline *comprehensively*, giving about equal weight to both the acute and chronic components of the guideline and applying it to all low back pain patients including active duty personnel, family members, and retirees. The other two sites chose to *focus* their initial implementation efforts on particular patient groups or clinics. One site is emphasizing patient education, thereby focusing on the acute care component of the guideline. This site has introduced a back class for all first-time low back pain patients to teach self-care for the current back pain episode and prevention of future episodes. The other site is implementing the guideline only for active duty personnel (at least initially), and therefore is focusing implementation activities in its TMCs.

Implementation Actions

Although the four demonstration sites have pursued distinct implementation strategies, they are using similar actions to carry out those strategies. Their main actions include introduction of the guideline logic and standards to primary care physicians, training of other clinic staff, use of the Form 695-R to document care provided to low back pain patients during primary care visits, patient education in self-care and exercise, and monitoring of implementation progress. Differences between sites, and between clinics and TMCs, have been more matters of degree than substance.

At the kickoff meeting, teams were encouraged to approach making changes in their MTFs by running small-scale tests before launching a major organization-wide implementation. The tests can serve many purposes: learning what does and does not work, identifying barriers, engaging staff in designing the new system, overcoming resistance to change; refining and improving the new system before imposing it on everyone. One site did try this to test the impact of the Form 695-R on clinic visit efficiency, but the others have not yet used this approach.

Guideline Introduction and Training. All sites have provided a first round of training to primary care physicians. Typically, the training was conducted in group sessions. On average, the sites report that about 60 percent of providers had attended a training session on the guideline. One reason given for the inability of the sites to train all providers was the high incidence of absences due to deployments or work schedules. Another reason, mentioned less frequently, concerns motivation, i.e. negative attitudes toward or resistance of providers to guidelines.

The length and content of training sessions varied among the sites. Providers at one site attended a half-day training session, whereas sessions held by other sites were considerably shorter. Training sessions consisted of a brief review of the guideline using the provider training video, often complemented with narration from a primary care provider from the site. Although no physicians took exception to the logic and content of the guideline, all sites reported having to

overcome concerns about potential loss of autonomy (e.g., cookbook medicine) and about the additional visit time that using the Form 695-R might require. It appears that eventual acceptance of the guideline by physicians was stronger where training sessions devoted a longer time to discussion of the pros and cons of practice guidelines in general, and of the low back pain guideline in particular. Acceptance of the guideline by individual providers generally was greater in the MTFs that already had worked with guidelines. Acceptance also increased with use, as physicians became more familiar with the guideline standards and found that it was helpful and often more efficient.

Several provider training issues were identified during our visit. First, MEDCOM had not yet obtained CME credit for the physician training video, and several sites believed that providing CME credits would increase attendance and participation in training sessions. Second, a special problem exists with training of contract and resource sharing providers, who are numerous at some MTFs. Contractually, these providers are paid based on the quantity of services they provide, and time spent on training diverts them from this activity. To overcome this issue, one site suggested including a clause in the contracts requiring these providers to use practice guidelines and participate in relevant training. This provision can be reinforced by granting CME credits for guideline training.

Frequent turnover was also identified as a major barrier to ensuring that guideline use is maintained at a specific clinic or TMC. All the sites plan to conduct additional training sessions for staff who have not yet been trained and for newcomers. For new staff, the intent is to present the guideline standards as "the way we do things at this MTF." As of the early post-implementation visits, none of the sites had developed an ongoing training schedule.

Training for Other Clinical and Support Staff. None of the sites held *formal* training sessions for nurses, medics, physician assistants, and other supporting staff who are called upon to implement procedures that support guideline use by primary physicians. In some sites, the clinic staff participated in decisions regarding procedures to be used for completing the Form 695-R and how to work with patients using the patient education pamphlet, which also serves as a form of staff training. In other cases, the staff were simply instructed to start using Form 695-R and to hand out the patient education pamphlet, without motivational information. For at least one site, limited attention to the training needs of nurses and other support staff was reported to have resulted in delayed and uneven implementation of procedures in support of the guideline

Documenting Cases with MEDCOM Form 695-R. The potential effect of Form 695-R on visit time was a key issue for most primary care providers. Typically, they have only 10 to 15 minutes to see each patient, as dictated by the high volume of sick calls and appointments. One site addressed this concern by asking two physicians in one TMC to test use of Form 695-R. After a short period of time, they concluded that the form was easy to use and shortened the time to process patients, including the time spent with the physician. As a result of this small-scale test, primary care physicians readily accepted use of the new documentation form.

Each site, and within each site, each TMC or clinic, differs in how successfully Form 695-R is managed, depending on how well the clinic staff accept the form, the availability of administrative support, and the physical layout of a facility. Typically, the patient is asked to fill out the patient portion of the form while in the screening or waiting room. At some TMCs or clinics where privacy is an issue, a nurse fills out the patient's portion while taking the patient's vital signs. At one site, the medic in the TMC handles sick calls by calling out to ask all who came

in for low back pain to identify themselves. The medic gives them the documentation form, and then leads them in filling it out as a group. Some difficulties that the sites have encountered in implementing this procedure consistently include:

Right on Time/Late arrivals. When patients arrive at the clinic right at their appointment times (or late), there may be no time to fill out the patient portion of the 695-RF before the primary care provider is ready for the patient. The provider may fill out the form for these cases, but many are not completed.

Patients with Multiple Ailments. Many patients in family care or adult primary care clinics have multiple ailments, with low back pain being just one of those ailments. Typically, a Form 695-R will not be filled out for these cases.

Second and Subsequent Visits. Only one site reported that it required a Form 695-R to be completed at every visit. The other sites felt that this approach is duplicative and unnecessary, although they recognize they are losing the ability to get information on changes in patient functional status and pain level.

Rapid Turnover. Rapid turnover of medics and physician assistants, especially at the TMCs, makes it difficult to maintain desired training levels for procedures and practices.

An additional issue shared by the sites is the frequent unavailability of patients' medical charts or the absence of the Form 695-R (or SF-600) in those records. At one site, an audit found that a chart or form was missing in 40 percent of visits. The severity of this chronic problem varies across sites. At MTFs that maintain charts centrally in the clinic, the problem is limited to missing charts pulled out for audits or left behind at a specialty clinic. At MTFs where patients have easier access to their charts, the problem is more extensive. In these instances, filling a Form 695-R at each visit helps to partially overcome the chronic unavailability of charts.

Patient Education. All four sites viewed patient education as an important component of treatment for low back pain cases, but the relative emphasis placed on it varied greatly. At one site, patient education is at the core of its implementation strategy for the low back pain guideline. The site's goal is to refer all first-time low back pain patients to attend a back class, which is a two to three hour session designed to teach self-care methods and exercises to new acute low back pain patients, to help their recovery and reduce frequency of repeat episodes. This model differs from the "back school" that tends to focus on working with chronic low back pain patients to help them learn to live with and mitigate their pain. At the other sites, the patient is given the patient education pamphlet, and clinic staff may provide one-on-one instruction before the primary care physician visit, or the physician may provide patient education during the actual visit.

Two issues were raised with respect to patient education. First, participants felt that primary care providers need to do more to emphasize the importance of patient self-care and to explain the patient's expected role in treatment and prevention of low back pain. Second, back class attendance is low, even when appointments are made at the initial visit and classes are conveniently available at the clinic. The rate of back class "no shows" typically exceeds 50 percent. For active duty personnel, one reason for non-compliance may be reluctance by soldiers to ask their commanders for release time for this purpose, or by commanders to grant the time.

Specialty Care Referrals

Specialty referrals are important clinical care steps at three basic points in the low back pain guideline. Primary care providers may identify a serious clinical problem when checking for red flag conditions during the initial visit, and for some of these conditions, a specialty referral is indicated. Specialty referral also may be needed for an acute back pain patient whose pain gets worse during conservative treatment because of a problem requiring specialty expertise. Finally, specialists may be sought by a primary care provider during treatment of chronic low back pain or sciatica patients, where diagnostic tests reveal problems.

The rates of specialty referrals are expected to be fairly low at two of the four demonstration MTFs (Darnall ACH and Reynolds ACH) because their patient populations are predominantly young active duty personnel and dependents (refer to Table 1), whose low back pain typically is simple mechanical back pain. Evans ACH and Beaumont AMC, on the other hand, serve an older mix of active duty and retired personnel, and the older beneficiaries are more likely to present with more serious problems or multiple ailments. Only Beaumont AMC has a depth of specialty care to refer to internally, so the other facilities may refer some patients to specialists at other MTFs or in the community.

Beaumont AMC acted on a problem with specialty referrals for chronic back pain cases within the facility that its team had identified early in its implementation activities (although these actions were not specified in its action plan developed in November 1998). Facing a long 10-week backlog in referrals to the neurosurgery clinic, the MTF's physical medicine and rehabilitation clinic took on a gatekeeper role. Primary care providers are instructed to send cases to PMR when the guideline indicates specialty referral is appropriate or when they have concerns about the patients. The PMR clinic performs further evaluation and, when appropriate, refers patients to medical or surgical specialists. A multi-specialty team led by PMR physicians reviews complex cases. This change has reduced the neurosurgery backlog to 2 weeks without a proportional increase in PMR referral backlog. The PMR clinic also performs permanent profiles and processes low back pain cases for Medical Evaluation Branch (MEB) review.

Monitoring Implementation Progress

Monitoring of compliance with the guideline standards and the effects of the guideline on clinical practices should be an integral part of every site's implementation strategy. In general, the demonstration MTFs have been slow to establish monitoring metrics and protocols, which can be attributed partially to the absence of DoD/VA low back pain metrics to serve as a guide. At the time of the first post-implementation site visit, only one site appeared to have a fully developed monitoring activity, and they were still in the process in adding metrics to track impacts of the guideline on practices and outcomes. At the time of the visit, the expert panel had selected its recommended DoD/VA metrics and prepared a report to the DoD/VA Working Group, but metrics had not yet been adopted officially by the DoD/VA leadership. Therefore, the MTFs still lacked this resource to help guide their own monitoring activities.[6]

[6] As a result of the first round of site visits in May and June 1999, MEDCOM and the demonstration sites have evaluated the status of coding. In August 1999, the MTFs agreed that they all would use the 724.2 diagnostic code to identify low back pain cases.

A measurement issue arose when we compared the diagnostic codes the sites were using to identify low back pain cases on the ADS coding sheets. Every site uses a different set of codes, which is a barrier to establishing a consistent set of measures to compare sites' low back pain visits (Table 9). Ft. Sill records all of its low back pain cases on one code, and it also has added codes in the "clinic only" section of the form to distinguish between acute (less than 6 weeks) and chronic (more than 6 weeks) low back pain cases. By contrast, Ft. Carson uses four codes to identify low back pain cases (724.2) separately from backache and other back cases (724.1/5/6). Ft. Hood is recording back class attendance on the ADS bubble sheet.

Table 9
Coding of Low Back Pain Cases by the Demonstration Sites

Diagnostic Code Used	Demonstration Site			
	Ft. Bliss	Ft. Carson	Ft. Hood	Ft. Sill
724.1		✔		
724.2		✔	✔	✔
724.3	✔		✔	
724.5	✔	✔		
724.6		✔		
Added Codes			Back Class	≤ 6 weeks > 6 weeks

All the sites were collecting and reporting some monitoring data, but most were still working on their monitoring plans and identifying the range of measures they intend to monitor. All sites plan to focus monitoring on the frequency and appropriateness of referrals to physical therapy and rates of use of MRIs, for both of which the DoD/VA low back pain guideline team has recommended metrics. The sites also plan to monitor other indicators, but their choices of measures differ, likely reflecting differing priorities. One site is monitoring (and another is planning to monitor) referrals to MEB/PEB to help their efforts to streamline this process. These sites are particularly concerned with the length of time it takes for the MEB process to reach a decision. Another site is monitoring referrals to and attendance at back classes, reflecting the high priority it has placed on patient education. Yet another site is tracking the frequency of visits for low back pain. Two sites also plan to focus on the consistency and appropriateness of temporary profiles.

Finally, the sites recognized the particular difficulties of developing reliable measures of the effects of using the guideline on clinical practices and costs of care. One measure that everyone thought would best capture the costs of care is the effect of the guideline on the number of lost duty days caused by low back pain. Although difficult to capture through Army administrative records, this measure could be included as a question in patient satisfaction surveys.

IMPLEMENTATION PROGRESS

The demonstration sites are in the early stages of integrating the low back pain guideline in their clinical operations due, in large measure, to the delays experienced in getting the finalized guideline and toolkit materials to the sites (see Section 2). By the time of our visits to the sites in

May and June 1999, the guidelines had been in use for less than 8 weeks at each site. Table 10 shows where, by type of clinic, the sites had implemented the low back pain guideline as of the time of the site visits. The guideline had been introduced and was in some use in all TMCs at four sites, and in family and adult primary care facilities at three sites. The guideline is also in use in occupational health at three sites and in the emergency room at two sites. All four MTFs have an emergency room, and occupational health clinic**.** Each of the sites indicated, that they would wait until after the summer "turnover" of military physicians to complete the guideline training for physicians who have not yet been trained and to train recently arrived physicians.

Table 10
Status of Implementation of Low Back Pain Guideline at the Demonstration Sites

Guideline introduced and reportedly in use at:	Ft. Bliss	Ft. Carson	Ft. Hood	Ft. Sill
Facility/adult clinic(s)	X		X	X
TMC(s)	X	X	X	X
Occupational Health	X	X		X
Emergency Room			X	X

Experience has shown that acceptance and commitment to practice guidelines are facilitated when all members of an implementation team are engaged in the decision-making process, formulation of the implementation plan, monitoring of progress, and problem-solving. As of 3 to 4 months into their guideline implementation activities, it appears that three implementation teams have begun to work cohesively together. These teams display a sense of shared goals, a perception that the guideline is helpful, and an ease in freely discussing implementation issues and problems. These teams have clear opinions about the strengths and weaknesses of the guideline, and they have adapted the low back pain practices to fit their specific priorities and circumstances. At one site, however, members of the implementation team and primary care physicians have not yet been fully engaged in formulating an integrated treatment and implementation strategy. The site's approach to training physicians and other staff on the guideline has tended to be directed more by the individual TMCs than the guideline team, and buy-in to the usefulness of the guideline is not yet widely shared among clinical staff.

FACTORS ASSOCIATED WITH IMPLEMENTATION STATUS

Several factors outside the direct control of the sites' implementation teams appear to have affected the acceptance, speed, and form of implementation of the low back pain guideline. These factors include competing demands for the MTF's resources and staff time, previous experience of the MTF with use of practice guidelines, differences in medical and administrative assets, and expected rewards from implementation. We were not always able to assess the relative importance of each of these factors in affecting guideline implementation. They are discussed here because they were explicitly or implicitly mentioned by our respondents as having shaped both their decisions on implementation approach and the progress they have made. In subsequent visits we will seek to get a better understanding of the relative influence of these factors.

Competing Demands

All demonstration sites indicated they were operating with reduced resources, while seeking to restructure services toward a greater emphasis on prevention and primary care. Two of the sites (Ft. Carson and Ft. Sill) are demonstration sites for the Medicare subvention demonstration, which has required a great deal of staff time commitment. In addition, the medical staff at two sites (Ft. Carson and Ft. Hood) have been experiencing increased demands due to the Army's engagement in Bosnia and Kosovo. In this context, the low back pain guideline has been competing with substantial other demands being managed by participating MTFs. Hence, the relative priority placed on implementation of the low back pain guideline varied across sites, and those sites experiencing the most demands on their medical staff tended to be the slowest in implementing the guideline.

The introduction of changes to clinical practices, in response to a new practice guideline, is a demanding process for clinics' staff. The time spent by primary care providers and support staff on guideline activities is taken away from other, potentially more immediate tasks. In particular, the members of the implementation teams are committing especially large shares of their time to this work. In many instances, the responsibility for planning and implementing the low back pain guideline, plus monitoring activities, has been added to the team members' other duties. Experience suggests that implementation of the low back pain guideline, or any other guideline for that matter, will not be effective and sustained without giving more careful consideration to the actual time needed to do the job and making this time available.

Prior Experience with Practice Guidelines

Two factors that enhanced acceptance of the low back pain guideline, as well as commitment of resources to implementation, were previous experience with implementing local guidelines and evidence that the low back pain guideline actually improved outcomes or efficiency. Sites that had already implemented practice guidelines appeared to have an easier time planning and working on implementation of the low back pain guideline, and providers already understood their value based on previous experience. Other sites with less guideline history appeared to face a higher "threshold" for providers to accept that guidelines can improve practice.

Differences in Medical and Administrative Resources

Each demonstration site adjusted the implementation of the low back pain guideline in accord with its respective medical and staff limitations. For instance, one site must send patients off-site for MRIs and hence seeks to minimize MRI use, preferring to continue to use CT scans. Other sites have limited access to some types of clinical expertise such as physical therapists, chiropractors, orthopedists, or neurosurgeons. Sites' action strategies, of necessity, reflect these resource profiles. For example, sites with depth of physical therapy staffing have resources to engage in active patient education, whereas those with chiropractic services tend to rely on manipulation as a conservative treatment component. In some cases, existing resources may not be used fully: One site offers back classes at its wellness center, but primary care providers do not yet see the classes as a resource for the education of low back pain patients.

The two sites that are participants in the chiropractic demonstration integrated this program within the low back pain guideline in different ways. The demonstration protocol requires that chiropractic treatment be offered to qualified patients as an alternative to traditional

medical treatment, and those patients who choose chiropractic care do not receive care from primary care physicians for the health condition being treated. At one site, this process has moved many low back pain patients into the chiropractic clinic and therefore out of the TMCs where the guideline standards are being applied. At the other site, chiropractic services appear to be used in conservative treatment as an equal treatment option along with physical therapy.

Nearly all sites indicated they could use more support staff. Chronic lack of adequate support personnel, including coders, has contributed to implementation delays at some TMCs. These shortages reportedly also affect the availability of patient charts at clinic visits and the completeness and accuracy of coding on the ADS form. At some sites, creative solutions were implemented to overcome such constraints. For instance, at one TMC, the medic identifies all sick calls patients who have come in for low back pain and works with them as a group to fill out the Form 695-R. At most clinics, the patient fills out the patient portion of the form while the nurse takes vital signs, thereby generating no additional work for the nurse.

Expected Rewards

By and large, the demonstration sites believe that the use of practice guidelines will result in more uniform and higher-quality health care for patients. Yet the sites have differing expectations about the effects of practice guidelines on utilization of health care services, and hence, on MTF costs. At one site, practice guidelines are seen as a means to move aggressively toward primary care and achieving service efficiencies, thereby mitigating the impact of a 25 percent budget reduction. At another site that already has a strong primary care capability and has worked with practice guidelines, the low back pain guideline is seen as moving the MTF yet closer toward its overall goal of comprehensive care management. At yet another site, the emphasis is on combat readiness, and the low back pain guideline's emphasis on self-care as part of conservative treatment is seen as a means to reduce the incidence of low back pain cases among active duty personnel.

The leadership of the sites noted it was important to allow the MTFs to share in any cost savings from use of practice guidelines and thus create an incentive for guideline implementation. They all expressed concern that MEDCOM might be tempted to capture all expected savings up-front in the budget process, possibly before savings are actually realized. How MEDCOM handles this issue may affect the zeal with which MTFs implement practice guidelines.

COMPARISONS TO OTHER MTFS IN THE REGION

As the demonstration was initiated, the other MTFs in the Great Plains Region were invited to attend the kickoff conference and they were provided with all the implementation planning and toolkit materials. Six MTFs sent representatives to the conference as observers, who brought back the information from the conference to their respective teams. These MTFs have not been participants in the demonstration activities, such as site visits and videoconferences, but they were encouraged to pursue implementation of the low back pain guideline on their own.

RAND conducted telephone interviews with representatives of the non-demonstration MTFs in October 1999, for the purpose of documenting their implementation activities and progress and getting their feedback on the guideline and processes. Three of the 6 MTFs reported they have undertaken some activities to implement the guideline, all of which have established a guideline champion and action team. One of these MTF had pursued

implementation actively, including definition of metrics, education of providers, and introduction of some changes to their clinical practices. Another MTF had performed some provider education, but no actions had been taken yet to change practices, and the third reported that they had not yet undertaken much action. The remaining 3 MTFs reported they had not pursued any significant implementation activities. All of the MTFs indicated they had plans to begin or escalate actions in the next few months. Among the reasons cited for not moving faster on implementation were delays in receiving the guideline and toolkit materials. Other reasons were resistance by providers and time constraints for staff.

The contrast between the experiences of the demonstration MTFs and others in the region highlight the importance of maintaining an ongoing dialogue between the MTFs and MEDCOM to stimulate and support implementation actions and to help troubleshoot problems that may arise. Methods for ensuring such dialogue occurs continue to be explored in this demonstration, as well as in the asthma and diabetes demonstrations.

EFFECTS OF THE GUIDELINE

It is too early in the implementation of the low back pain guideline to draw definitive conclusions about its effects on clinical practices, service utilization, and patient outcomes. Reports of effects on utilization at this early stage are encouraging, although anecdotal. More emphasis will be placed on documenting guideline effects as the evaluation continues.

Effects on Efficiency

Before working with the low back pain guideline, many primary care physicians were concerned that practicing according to the guideline might add to the time required to process a low back pain visit. Contrary to their expectations, when physicians replaced the SF-600 form with the Form 695-R to document care in compliance with the guideline, they found that their visit time often was reduced. Nurses and medics had similar concerns prior to using Form 695-R, but they also reported that use of the form did not generate more work and, in some cases, helped streamline patient flows. Therefore, with the right tools to aid implementation, practice according to a guideline can be made more efficient. The next challenge is to quantify these effects.

Effects on Clinical Practices

Implementation of the low back pain guideline has resulted in major changes in clinical practices at two demonstration sites. At one site, practice has been shifted from an emphasis on physical therapy to an emphasis on patient education and self-care. At the initial visit, acute low back pain patients are referred to attend a back class as part of conservative treatment. The site's implementation team believes that 90 percent of cases can be treated this way if patients follow self-care and do the recommended exercises.

Another site has reduced unnecessary specialty referrals for chronic back pain cases by establishing the physical medicine and rehabilitation clinic as "gatekeeper" to triage specialty referrals. As discussed above, this change has reduced the neurosurgery backlog from 10 weeks to 2 weeks without a proportional increase in PMR referral backlog. The use of a multi-specialty team to review complex cases also may be contributing to improved rates of appropriate referrals and improved management of patients with difficult problems. Management of low back pain

cases among military personnel by the PMR clinic may be expected to achieve more appropriate and timely permanent profiles, MEB reviews, and dispositions.

Effects on Health Care Utilization

For now, the sites are focusing their monitoring on the effects of the low back pain guideline on the frequency and appropriateness of use of various treatment options, including back classes, physical therapy, chiropractors, MRIs, orthopedists, and neurosurgeons. Expectations vary about effects on use of these services. The use of some of these practitioners may decline, while use of others may increase, depending on the strategy being implemented by each MTF. Two sites reported that they have seen indications of reduced physical therapy visits in early data after their implementation activities started, but they will need more data before any trends can be confirmed. One site is aiming for a long-term decline of return cases for low back pain, as more patients practice self-care, exercises, and re-injuries are prevented. Most of these service-use effects can be measured using ADS and CHCS data.

Integration of the Low Back Pain Guideline With Prevention

The introduction of the low back pain guideline has highlighted to the demonstration sites the importance of actions to prevent work-related low back pain injuries. Two sites are actively working with unit commanders on primary prevention of low back pain injuries in active duty personnel by changing training procedures. One of these sites is implementing a preventive medicine ergonomics demonstration with the support of CHPPM. It has drafted policies and regulations to prevent work-related injuries, plans to provide education in the work units, and will track incidence of injuries by unit and MOS. The occupational health clinic in another site has extended its use of the guideline by identifying high-risk work locations and providing this information for industrial hygiene evaluation. Several individuals suggested that a space be added to the Form 695-R for a work unit identifier, to generate the data needed to focus prevention efforts on units with a disproportionate incidence of low back pain injuries.

There are mixed reviews on whether a prevention module should be added to the low back pain guideline. Although one site suggested that prevention be added to the guideline, others believe that the staff functions and methods required for primary prevention differ sufficiently from health care delivery that it should be separate from the guideline.

Section 5
LESSONS LEARNED FROM EARLY DEMONSTRATION ACTIVITIES

Although the low back pain guideline has been in use for a short period of time at the four demonstration sites, we have learned much from our observations and interviews. Many of these lessons can be applied to support both the continuing implementation of the low back pain guideline and the successful introduction of other practice guidelines.

Our evaluation findings to date highlight the importance of committing both leadership support and adequate resources to sustain the "change management" activities that lead to successful implementation of practice guidelines within the Army Medical Department. Any change in practices is difficult to implement because change requires people to relinquish habits and begin to think and act in new ways. When these changes involve introduction of guidelines that standardize clinical practices, resistance by many clinicians may be yet stronger because they fear loss of professional autonomy. Even with the best planning, an organization managing such significant changes tends to underestimate the amount of preparation, resources and time needed to do it effectively.

A strength of the DoD/VA low back pain practice guideline is its clinical credibility due to the professional stature of the guideline team that worked on the guideline and its solid grounding in scientific evidence. Yet despite this credibility, all the demonstration sites have had to work through instinctive resistance to practice guidelines by many clinicians. The sites making the greatest progress to date are those that have dedicated staff time and effort to work closely with physicians and other clinic staff, to test the new practices and build their support.

As a facility progresses in integrating the guideline standards into its routine practices, which is the goal of guideline implementation, then the resources being applied to this activity can be reduced and reallocated. Continuing maintenance of guideline practices then becomes just another element of the facility's quality and utilization management activities. The MTFs have not yet determined how they will continue to monitor low back pain care on a routine basis, although two facilities indicated they have considered this issue and another is using an already established guideline management structure. This issue extends to the corporate level as well, where MEDCOM will need to have dedicated staff resources to work with the MTFs to modify practices as revisions are made to the DoD/VA guideline or metrics, which are scheduled to be performed every two years.

In the remainder of this section, we summarize the key issues that have arisen during the first phase of our evaluation of the low back pain guideline demonstration and present suggestions for responding to these issues. The issues are organized according to the following components of the implementation process:

- Preparing for implementation
- Supporting implementation
- Monitoring and measuring effects of implementation
- Institutionalizing the use of practice guidelines

PREPARING FOR IMPLEMENTATION

Clarify the Goals for Implementation of Practice Guidelines.

AMEDD's stated goals of using evidence-based practice guidelines are to achieve greater consistency and quality of care. Despite these clearly stated goals, the various commanders, physicians, and staff at the low back pain demonstration sites identify broader purposes for implementing practice guidelines in the Army. Some of the diversity of their perceptions may be due to incomplete knowledge of the priorities established for the AMEDD as a whole, and some may reflect very real differences in priorities among MTFs regarding clinical service delivery and the performance of their organizations. Some examples of the definitions they offered are:

- a new way of practicing scientifically based medicine
- a reminder of good practice
- a way to standardize care
- a way to improve quality of care
- a way to cut costs of medical care

MEDCOM has the leadership role for establishing and communicating consistent goals and expectations for the Army health system. It must assure that all aspects of guideline and toolkit design, actual practices, and measures of outcomes are consistent with these goals. In turn, the MTFs need guidance from the MEDCOM regarding how much flexibility will be allowed for achieving the systemwide goals, for example, the extent to which the MTFs may choose which guidelines to implement and when to implement them. By communicating goals clearly and consistently, MEDCOM helps to create a centrality of purpose for guideline implementation for the entire Army health system. These goals also serve as the basis for evaluating outcomes of the guideline implementation activities, so that all MTFs are held to the same standards of care across the system.

Given the goal for consistent and quality practices across the AMEDD system, one may envision that all MTFs would be tasked to implement a specified set of practice guidelines and that the implementation schedule and actions for each guideline would apply to all MTFs. Thus, for any given guideline, clinical practices across the MTFs would converge simultaneously toward the standards specified by the guideline. Yet this approach ignores the reality that each MTF has a somewhat different mix of patients, and hence, prevalence of health care needs, as well as different combinations of assets to serve their respective populations.

The diversity of starting conditions for the Army MTFs poses the dilemma of how much diversity of actions to allow the MTFs while still retaining the ultimate goal of achieving practice consistency and quality across the AMEDD. The following are two general aspects of a systemwide guideline strategy for which some flexibility across MTFs may be considered.

1. ***Which guidelines to implement first.*** Considering all the practice guidelines that the AMEDD has selected or will select for systemwide implementation, individual MTFs can be expected to seek different strategies regarding which guidelines to implement. One MTF may determine that it is performing well relative to one guideline, but needs more work on others. Its choices may also be related to the priority health care needs of its patient mix or other factors. Another MTF, for similar reasons, may emphasize an entirely different set of

guidelines. Thus two MTFs can aim to achieve the same overall performance standards, but to do so, they would pursue different strategies for which guidelines to implement and when.

2. ***For a given guideline, which practice standards to achieve.*** Any given guideline establishes a large number of "practice standards" in the form of steps in the algorithms and the supporting annotations. The MTFs will vary in their current performance relative to each standard, with some MTFs performing well in some areas and needing improvement in others. Lacking external constraints, each MTF can be expected to define a unique strategy and actions that focus on improving the aspects of care where they are farthest from compliance with practice standards. Yet MEDCOM is establishing metrics and monitoring processes that will place such constraints on the MTFs' implementation strategies. As part of the DoD/VA initiative, the AMEDD is establishing a limited number of metrics to measure performance on the aspects of care that the DoD/VA leadership team deem to be most important. MEDCOM also may choose to use additional metrics to monitor MTF performance on other aspects of care, to further ensure achievement of consistent and quality clinical practices across the AMEDD. MTFs likely will tend to focus their actions on these metrics because they will want to perform well where they are being measured, even if these areas may not be their most important practice issues. Therefore, choices of monitoring methods and metrics should be made carefully to align the monitoring process with real priorities for practice changes.

Devise a Focused and Realistic Implementation Plan.

The construction of an implementation action plan serves several purposes for an MTF guideline team. Through the process of developing the plan, the MTF's implementation team educates itself on the current status of its clinical practices and sets its priorities for actions to bring practices closer to those recommended by the guideline. This very planning process helps develop cohesion among the team members, which is an important first step in the process of building buy-in among a broader set of stakeholders at the MTF. The action plan also is a working tool during implementation, to stimulate dialogue and continued planning with clinical and administrative staff on approaches for putting the guideline into practice. Finally, the action plan is the "road map" that the MTF and MEDCOM use to assess actual progress in implementation and address difficulties that might arise.

Four issues have arisen during the low back pain guideline demonstration regarding the development and use of the MTF action plans. A common theme in these issues is the need for the MTF teams to regularly update and revise their action plans as they carry out their implementation activities.

1. ***Data for planning.*** A structured procedure was not in place to ensure that MTFs' planning decisions at the kickoff conference were based on data on the population of low back pain patients they serve and their clinics' current practices for managing low back pain care. The teams, generally, were working from their qualitative knowledge of patients and practices, rather than using more structured data sources.

2. ***Actions for practice changes.*** All of the MTF action plans that emerged from the kickoff conference focused on guideline introduction and training of providers, with fewer actions defined to change current practices in clinics that serve low back pain patients. As discussed above, this process evaluation has shown that actions in both areas are necessary to achieve momentum in integrating guideline standards into MTFs' practices.

3. ***Time perspective for target dates.*** The MTFs' initial action plans tended to focus on the first 6 months of implementation, and they lacked longer term target dates for achieving practices consistent with this guideline. This approach is reasonable early in the implementation process, because the MTFs need time to test the viability of their planned actions. In addition, needs for subsequent actions will arise as they carry out the early actions. Without longer-term targets in the initial plans, however, the MTFs risk premature loss of momentum after they complete the early actions.

4. ***Plan updates.*** Although procedures have been established to monitor implementation progress, a formal process for updating the plans is not yet in place. This mechanism would help the MTFs move toward completion of actions by guiding the thinking of the MTF teams and by creating accountability to MTF leadership and MEDCOM for continued progress. Metrics monitoring processes also will yield information on service delivery issues and impacts of guideline implementation, which should lead MTFs to modify actions through plan updates.

All of these issues point to improvements needed in the planning structure and guidance provided to the MTFs as they develop and carry out their implementation action plans. Learning from this experience, MEDCOM and RAND have made several changes to the planning tools to support MTF guideline implementation activities, and these changes have been applied to the asthma demonstration. A new component has been added to the planning process to guide the MTFs in developing baseline data on their patient populations and current practices. The MTFs perform this step before the kickoff conference, compiling a combination of quantitative data on the patient populations and qualitative information on current practices. This mechanism is being tested for the first time for the MTFs participating in the asthma demonstration.

The planning materials have been modified to (1) guide the MTFs to define an overall implementation strategy that focuses on the populations or locations where they believe actions are most needed, (2) provide worksheets for actions in both guideline introduction and education and in changing clinical practices, and (3) provide an example of a completed plan that the MTFs can use as a template (See Appendix G). The written instructions for the steps in the planning process also have been simplified, to place the focus on defining the desired planning products and allow the MTFs flexibility to determine how to get there.

A key lesson that arose from the sites' early experiences was the apparent importance of having action strategies in two distinct areas: (1) guideline introduction and provider education and (2) changing clinics' operations to support integration of the guideline standards into routine practices. Based on preliminary observations of the sites' implementation activities and progress, neither strategy alone appeared to be sufficient to achieve desired changes in clinical practices.

Work remains to be done on establishing a procedure and support materials for plan revisions and updates. This step should be put into place for both demonstrations that currently are in operation (low back pain and asthma). It is advisable to work with the MTFs participating in both demonstrations in the design and review of the process, which should yield a better product as well as enhance the sense of buy-in by the MTF teams.

Have Guideline, Toolkit, and Metrics Completed Before Starting Implementation.

One of the clearest lessons from the low back pain guideline demonstration was that the November 1998 Kickoff Conference was held prematurely. With only a draft practice guideline (although essentially completed), incomplete toolkit materials, and no metrics for monitoring, the

participating MTFs were being asked to begin changing practices before the needed tools were available to support their efforts. As a result, the MTFs lost the momentum created by the conference planning activities when they had to wait for toolkit materials. A hazard of such delays is loss of team members and available staff time for the implementation activities, as they turn to other activities demanding their attention, which occurred in some of the MTFs.

As a result of this experience, MEDCOM has defined a guideline implementation approach that ensures that the guideline itself, toolkit materials, and metrics are completed before an official kickoff date takes place. This approach was used for the start up of the asthma practice guideline, and MEDCOM is committed to ensuring the same readiness for each subsequent guideline.

Readiness to implement pertains not only to initial implementation, but also to the on-going supply of consumable supporting materials. For example, MTFs in the low back pain demonstration have asked whether MEDCOM or the MTFs are responsible for printing new supplies of the patient education brochures. Although the materials may differ, this general issue will arise for virtually every guideline toolkit. A MEDCOM policy and system for printing, storing, and distributing of materials will be required to ensure that MTFs have reliable and easily access to needed supplies.

Design the Toolkit Items for Primary Care Providers.

The DoD/VA low back pain practice guideline addresses management of low back pain care by primary care physicians. In the Army, these primary care providers work in the TMCs and the MTF family and adult clinics. With busy schedules and short appointment times, they have little time to make a diagnosis, prepare a plan of care, order tests, educate patients, and make the appropriate referral(s). Physicians' messages during the site visits were clear: all materials provided - the guideline itself and the supporting written and video materials - need to be designed to increase providers' efficiency and to help them get to information quickly. They suggested that, prior to implementation, toolkit materials be reviewed by practicing primary care providers and tested in a primary care clinic environment(s). Four design factors are of particular importance to primary care providers:

- Focus the training and algorithm supporting material on the key elements of the guideline.
- Keep all forms and algorithm material on one page, even if that means breaking the algorithm into separate components.
- Assure that all medical practice demonstration shown on video is appropriate for a primary care provider.
- Assure that supporting forms and patient flow protocols do not add to visit time and or create additional work.

SUPPORTING IMPLEMENTATION

Align Purpose and Resources.

In addition to the implementation of practice guidelines, the Army as a whole and individual MTFs are engaged in various restructuring efforts to improve access and quality of care for their populations and to reduce service delivery costs. All of these efforts compete for

leadership and staffing as well as for other resources. In this environment, a necessary condition for successful practice guideline implementation is the steady, visible commitment by the Surgeon General, Regional Commanders, and MTF commanders. Statements of support need to be accompanied by concrete steps that often speak louder than words.

Furthermore, practice guidelines need to be presented as consistent with and in the context of other related efforts such as disease management, population management, prevention, outcomes measurement. Indeed, these other efforts are likely to influence how MTFs approach implementing a practice guideline. For example, some may not want to form an asthma guideline implementation team because they already are doing asthma disease management, and the disease management team can simply establish the guideline as the standards for its processes of care.

Our visits suggest that, in addition to the actions and statements already made by the AMEDD command structure, several other actions could help reinforce guideline implementation in the AMEDD. Perhaps the most important actions are ensuring that appropriate staff and resource support is given at both at the corporate and MTF levels to carry out the change management processes required to introduce new clinical practices. At the corporate level, resources need to be committed not only in the MEDCOM office but also in other functions such as CHPPM, PASBA, and Regional Command offices. Experience is showing that the diversity of activities involved (e.g., toolkit development, metrics implementation, technical support for MTFs, data collection, etc.) requires a diversity of staff capabilities and technical resources. As more guidelines are implemented, staff will have to manage multiple clinical topics and oversee multiple implementation activities.

At the MTF level, time was provided for the implementation team members to attend the kick-off conference. In some instances, however, responsibilities for carrying out the actual work in the implementation action plan was simply added to team members' other duties. At some MTFs, heavy workloads and competing demands for team leaders' time resulted in delayed start of implementation (beyond delays involved with toolkit materials) as well as weaker follow-up to ensure providers are trained in the guideline and supported in working with it. This issue relates closely to the first issue above under Preparing for Implementation--clarifying goals and priority given to guideline implementation. Resource limitations should be assessed as priorities are assigned for guideline implementation, and guidelines given high priority need to be supported appropriately.

Four additional suggestions were made during the process evaluation regarding leadership support for implementation of the low back pain guideline. Although relatively small in actual resource requirements, their symbolic messages are eloquent:

- Provide CME credits for participation in the training on practice guidelines.
- Include the use of practice guideline in contracts with contract and resource sharing physicians.
- Provide toolkit items to the MTFs free of charge.
- Recognize and publicize on an ongoing basis success stories including efficiency gains and improvements in clinical practices resulting from implementation of guidelines.

Maintain Flexibility in Guideline Implementation, but Clarify What Is Expected.

As described in Section 4, the demonstration sites have taken quite different approaches in implementing the low back pain guideline. Allowing flexibility for differing strategies is important so that each MTF can work in the context of its own mission, mix of patients, and medical and administrative assets. At the same time, the goal of achieving greater consistency in medical care requires that consistent expectations be set for practices or documentation activities in some areas. There also may be questions regarding the patient groups for which a guideline should be implemented. We identified the following examples of this issue during our site visits:

- Should the guideline be used for all patients with low back pain, i.e. active duty, family members, civilians, and retirees, or should coverage be at the discretion of the MTF?
- Should MTFs be required to use the documentation form instead of the SF-600 for all low back pain cases they treat under the guideline? Does this include patients being treated for multiple ailments in one visit?
- Should the low back pain documentation form (or a separate follow-up form) also be required for all subsequent visits?
- Should referral to back classes for first-time patients be required and should back classes be standardized?

We anticipate that these and other policy issues will emerge relatively frequently as MTFs begin implementing each new practice guideline. MEDCOM should put in place the procedures and capacity to review such issues promptly and to work with the MTFs in resolving them. Some items clearly will be related to techniques used to implement a guideline, for example, coding for ADS forms, which can be handled by MEDCOM. Others will raise questions about the guideline itself, for example, the handling of back classes for first-visit patients, which may need to be considered by the DoD/VA guideline team.

Plan for Ongoing Training.

Several training issues were identified during our visits that merit further work to ensure that all involved in implementing a practice guideline are properly prepared to do so. The low back pain guideline demonstration has highlighted that the educational tasks are quite complex, and that these tasks need to continue on a regular basis.

First, all of the participating MTFs have had difficulties educating all primary care physicians on the low back pain guideline. Contributing factors have included frequent absences due to deployment and other duty related reasons, periodic turnover, and heavy caseloads. This problem is especially acute at MTFs that are preparing troops for deployments. In addition, resource sharing physicians do not have an incentive to participate in training. These factors have made training difficult, despite the MTFs' awareness that they need to reach all their primary care providers.

Second, none of the sites has provided formal training on the low back pain guideline and materials to nurses, physician assistants, medics, and other clinic personnel. Training is important to help make them "players" in implementing changes to their daily work routine, as well as to ensure that all clinic staff are using consistent practices in caring for low back pain patients. Consideration should be given to development of a training video for clinical and support staff or a written protocol defining management of patients and clinical and support staff responsibilities.

The sites have recognized the need to establish a regular training schedule to help support ongoing practices consistent with the practice guideline. Such sessions could serve to review providers' experiences with the guideline, maintain skills specified in the guideline, and address issues that arise. For new military and civilian providers, the goal should be to incorporate the guideline practice standards into their standard orientation as they arrive at an MTF.

To help support the MTFs' training requirements, it would be useful to provide the MTFs guidance about learning objectives for different groups of clinical personnel. For example, physicians, physician assistants, nurse practitioners, and nurses need to know the clinical content of guidelines. On the other hand, medics or receptionists have different needs—they need to understand how the guideline will affect patient flow and their roles in supporting the clinicians.

Strengthen and Expand the Low Back Pain Toolkit.

The MTFs confirmed the usefulness of the low back pain toolkit materials, expressing many positive comments during our site visits. They also made a number of useful suggestions to improve existing toolkit items, as described in Section 2. MEDCOM currently is reviewing these suggestions and, in many cases, is working with the demonstration MTFs to reach decisions on revised materials or coding schemes. Suggestions also were made for establishing additional toolkit items that participating sites had developed:

- Model profile for active duty personnel
- Model back class to educate acute low back pain patients on self-care and exercise
- Training video and support materials for clinical and support staff
- Templates for education programs for physicians and for clinical and support staff
- A standardized procedure for steps in the low back pain primary care visit

As other guidelines are implemented, there will be growing needs to refine and broaden the toolkit items for the various guidelines. MEDCOM and CHPPM should anticipate these demands as they plan for staff resources, to ensure that effective and timely revisions can be made to the toolkits in support of continued implementation efforts.

Facilitate Exchange of Information.

We reported in Section 3 that a decision was made to use the AMEDD Knowledge Management Network for electronic sharing of information among MEDCOM and the demonstration sites to support their implementation activities. This web-based approach did not succeed in eliciting the hoped-for exchange of information among the demonstration MTFs. Reasons for this lack of activity include limited time or interest on the part of MTF team participants, inadequate access to a computer, and negative responses to the KMN because it requires users to log on and it is difficult to navigate. In addition, some teams expressed little interest in reaching out to other MTFs, which may have contributed to limited use of the KMN. One possible explanation for reluctance to exchange information may be unwillingness by MTF commanders to have subordinates sharing information about barriers, failures, difficulties. To the extent this is a factor, and only successes can be reported, then exchange has much less value.

There continues to be a real need for exchange of information among the MTFs and MEDCOM during guideline implementation, including both communication mechanisms and central locations for posting guideline information. Information exchange options should continue

to be explored during the remainder of the low back pain guideline demonstration and in the subsequent demonstrations. To be acceptable to users, a system must enable participants to obtain desired information with ease, recognizing that physicians and other members of the implementation teams have little time to search for information. The experiences in this demonstration indicate that any barrier will sharply discourage use. The following are some options that have been used or discussed:

- Identify key members of each MTF team as designated KMN users, train them on the system, and have them share information with the other team members;
- For the KMN, perform all user registrations centrally so the MTF teams do not have to spend time working through the system; supply team members with starting passwords and instructions for using the system (being tested with the asthma demonstration);
- Establish a separate, simple e-mail listserver that MTF teams can use through their regular e-mail and that avoids special registration or logging on to a system;
- Continue posting guideline and implementation materials on the Quality Management website, and solicit feedback from MTFs for other capabilities they would like to be added to the system;
- Conduct telephone or videoconference meetings with the guideline team leaders (e.g., champion and facilitator) to encourage communication among the MTFs;
- Conduct periodic visits to the MTFs to exchange information and provide technical support for their activities, which could be done by MEDCOM or regional staff.
- Encourage monthly reports on the e-mail from each site reporting what things were tried in the past month, issues, barriers, solutions.

MONITORING AND MEASURING EFFECTS OF IMPLEMENTATION

As discussed in Section 4, the demonstration sites were still in the early phase of introducing the low back pain guideline at the time of our site visits, and most sites had identified a limited number of measures for monitoring implementation progress. We highlight here a few key measurement activities and issues that have been identified thus far in the evaluation. In the remainder of the evaluation, we will focus more explicitly on metrics and measuring the impacts of guideline implementation.

Assure Consistent Coding of Low Back Pain Cases.

Coding consistency for this and other guidelines will be critically important to the ability to understand the impacts of the guidelines on clinical care in the Army MTFs. To monitor guideline implementation effectively, the MTFs' low back pain patient populations must be identified completely and consistently. These patients constitute the denominator for most of the metrics being monitored. To facilitate comparisons of indicators across MTFs, it is important to use consistent diagnostic codes to document low back pain visits on the ADS forms. MEDCOM and the sites have agreed upon a consistent set of low back pain diagnostic codes and coding protocols for the ADS forms. This represents a substantial change in approach because the demonstration MTFs were not using the same set of codes prior to introduction of the guideline.

This demonstration also is affected by a larger system issue that affects the integrity of MTF service use data. Staffing constraints have led to chronic problems with coding quality because MTFs are understaffed for coders. Physicians or other staff have to code many forms, and they are not well trained in coding methods. Where coding is done by a variety of staff, errors and inconsistencies are inevitable.

Perform Compliance Audits.

At the time of our visits, one site intended to carry out compliance audits to assess the extent of compliance with appropriate use of the MEDCOM Form 695-R. Such audits provide important checks to identify errors in methods and to address misunderstandings, problems, issues, and suggestions that staff might have. These audits should be seen as part of the learning process during guideline implementation, and the MTFs should be encouraged to conduct them during the first year of implementation activities.

MEDCOM may want to establish a compliance audit protocol for the Form 695-R, as well as for documentation forms being developed for other practice guidelines. For the long-term, MEDCOM also should evaluate whether and how to carry out periodic and random compliance audits. These audits might be conducted independently by a special central unit or they could be incorporated within MEDCOM's regular oversight functions.

Implement a Systemwide Monitoring Process.

The absence of DoD/VA metrics for the low back pain guideline when the demonstration started meant that the MTFs lacked a resource to guide their choice of monitoring metrics. Now that a set of DoD/VA metrics has been established, work is underway to develop a data collection method for the measures and provide measurement guidance to the Army MTFs. While the MTFs retain flexibility for choices of many additional measures, it is a far easier task for them to work with already established measures, leaving more resources to focus on other measures they feel are important to monitor. A related need is for MEDCOM to establish a monitoring protocol that delineates the measures, procedures, and frequency of reporting by the MTFs.

INSTITUTIONALIZATION OF PRACTICE GUIDELINES

In addition to providing feedback on their experience with implementation of the low back pain guideline, commanders and staff at the demonstration sites also touched upon some opportunities and barriers involved in implementing multiple guidelines. Not all personnel interviewed shared those views, but they were expressed often enough or with enough intensity that they deserve consideration while planning for implementation of multiple guidelines.

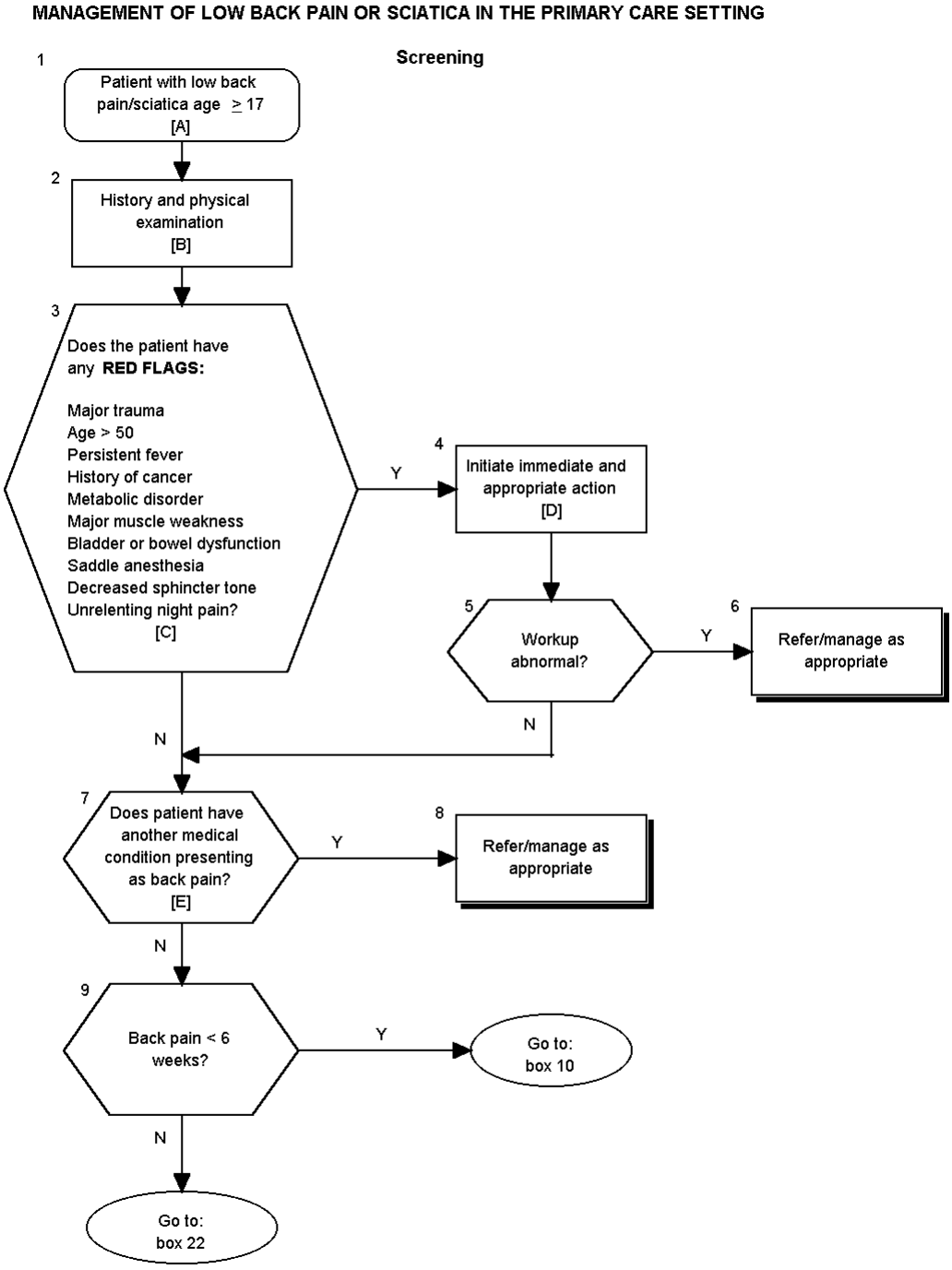
Concerns were expressed along two dimensions: (1) getting new practices integrated into MTFs' standard procedures so that the change management phase of implementing each guideline can be time-limited and (2) managing practices and monitoring under multiple practice guidelines as MEDCOM introduces a growing number of guidelines. These issues highlight the importance of action plans that include target dates for completing the integration of the guideline into practice because MTFs will need to complete the introduction of each successive guideline to free up resources to work with subsequent guidelines. In addition, MTFs need to be aware that strategies that work for implementing and maintaining one, two or three guidelines may not be sufficient for managing eight, nine or ten guidelines. This is all the more noteworthy because the

DoD/VA guidelines specifically target primary care practice. Some specific items were raised during the site visits that merit consideration:

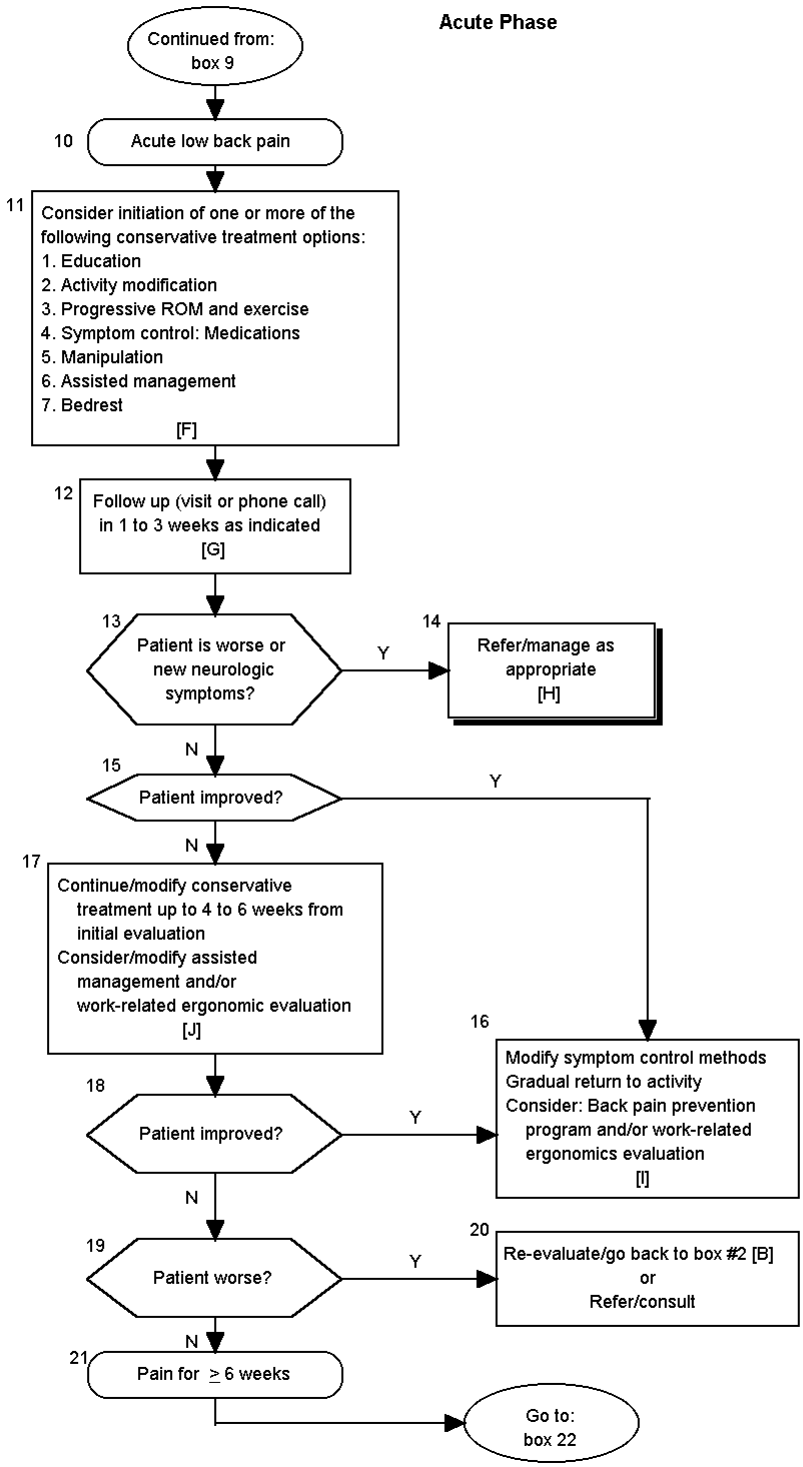
- ***Provide incentives to implement.*** The MTFs and providers will have more motivation to put a new guideline into practice if they are rewarded for doing so. For example, one suggestion was to establish a mechanism in the budgeting process to allow any savings achieved by an MTF to be shared between the MTF and the AMEDD.
- ***Phase in additional guidelines individually.*** Substantial concern has been expressed by the leadership of the demonstration MTFs about the potential burden of introducing multiple practice guidelines simultaneously. Sentiment supports an approach by MEDCOM to select guidelines that are most relevant to the Army and establish a feasible schedule for the MTFs to phase them in, with some flexibility to allow MTFs to apply first the guidelines that will help them most in improving quality and efficiency.
- ***Provide MEDCOM support and oversight.*** MTF leadership also reinforced the value of MEDCOM serving in a proactive role to support the MTFs' guideline implementation activities. Even with some of the early start-up problems of the low back pain guideline demonstration, the MTFs see the merit in this approach, which also is a key to achieving consistent clinical practices across the MTFs.
- ***Automate medical records.*** There is no doubt that an "ultimate" tool to ensure consistent implementation of guidelines is to build the guideline standards into a computerized system that providers use to document care, order tests and treatments, and access information on their patients. The data in such a system can be downloaded into reports for monitoring processes. A computerized system is only a tool, however, and its full potential will be realized only if all the other implementation activities have been accomplished to train clinicians in the practice standards and modify MTF clinic procedures to support desired practices.
- ***Emphasize use of guidelines in GME.*** The most effective method to ensure integration of guideline standards into the practice of medicine is to teach the guideline as current practice in graduate medical education. This approach only influences new physicians emerging from training, however, so other interventions remain important to change clinic practices as science generates new information on best practices.

A substantial body of information and insights has been reaped from examination of the early experiences of the four MTFs participating in the AMEDD low back pain guideline demonstration. Lessons drawn from this demonstration already have guided work on subsequent demonstrations for implementation of the asthma and diabetes practice guidelines, as well as daily actions by MEDCOM as it prepares for systemwide implementation activities. The RAND team believes the documentation in this report can serve as a continuing resource for all these activities, while anticipating continued enrichment of our information base as the process evaluation for the low back pain demonstration moves into the second round of site visits and observations.

Appendix A
DoD/VA Low Back Pain Guideline Algorithms

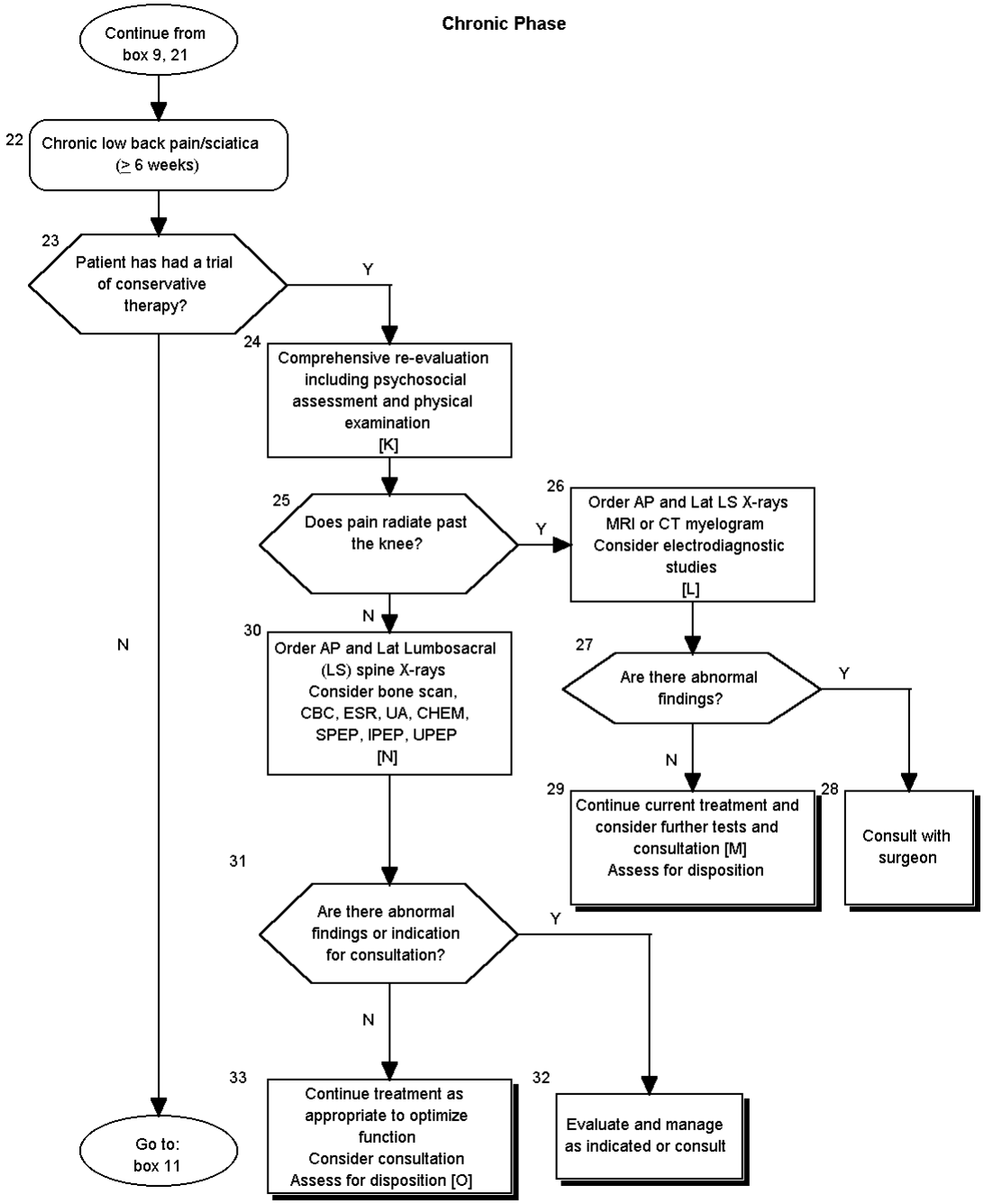


MANAGEMENT OF LOW BACK PAIN OR SCIATICA IN THE PRIMARY CARE SETTING



MANAGEMENT OF LOW BACK PAIN OR SCIATICA IN THE PRIMARY CARE SETTING

Chronic Phase



Appendix B

Metrics for the DoD/VA Low Back Pain Guideline
(Report of the DoD/VA Expert Panel)[7]

In January 1999, the Low Back Pain Guideline Team was charged to develop a set of indicators for monitoring implementation of the DoD/VA low back pain guideline. The DoD and VA intend to select a limited number of indicators to be monitored by all participating organizations to provide systemwide performance benchmarks to which local and organizational progress can be compared.

As the guideline team began its work, there was not an existing inventory of tested indicators for management of adult low back pain or sciatica that could be adapted to this guideline activity. Therefore, the team undertook a comprehensive process to identify candidate indicators, from which it selected a limited number of indicators for DoD/VA application. Guided by the priorities defined in the DoD/VA low back pain guideline, the guideline team participated in a three-stage process for indicator selection:

1. ***Delphi process round 1*** – team members individually evaluated a preliminary list of candidate measures and suggested others to add to the list. Results were tabulated for use in Round 2.
2. ***Delphi process round 2*** – team members individually ranked all of the candidate measures from the round 1 list plus all new measures suggested by the members. Rating scores were summarized in preparation for a team teleconference.
3. ***Team teleconference*** – the guideline team selected a final list of indicators, taking into consideration the team's ranking scores as well as other issues (e.g., data availability, data collection burden).

This report presents monitoring recommendations that are the culmination of the low back pain guideline team's selection process, including:

- two sets of indicators that are recommended for use in systemwide monitoring by DoD and VA, and the team's rationale for selecting the recommended indicators,
- discussion of clinical or measurement issues to be addressed as the priority indicators are transformed into metrics for monitoring, and
- a list of additional indicators that the guideline team rated highly that individual services, military treatment facilities, or veterans health care facilities may consider for use in their local monitoring activities.

During the first round of the Delphi process, the team increased the original list of 19 candidate indicators to a total of more than 45 indicators, many of which were modifications of the original candidates. In addition, team members submitted numerous comments regarding candidate indicators, monitoring issues, and measurement concerns. These comments were summarized and reported back to the team members for consideration during the second round of the Delphi process, in which they rated the candidates in the expanded list of indicators. To perform the ratings, each team member assigned each of these 45 indicators a score on a scale from 0 to 10 (where 0 is lowest and 10 is highest). The scores were tabulated and reported back to the team for its final deliberations during a teleconference that was held on 8 April 1999.

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[7] This report is posted on the MEDCOM Quality Management website.

RECOMMENDED INDICATORS FOR SYSTEMWIDE MONITORING

As the low back pain guideline team approached the task of selecting indicators, it recognized the strengths and limitations of the two basic methods and data sources for monitoring guideline implementation: special studies and routine monitoring. The team decided that it was important to use both methods to monitor indicators to take advantage of their respective strengths.

> ***Special studies*** collect information recorded in patients' medical charts or reported by patients in surveys, obtaining a rich level of detail about the patients' clinical status (such as level of back pain or physical function) and clinicians' assessments of required interventions. These studies are time consuming and costly to perform, however, so they cannot generate data on a routine basis (e.g., monthly or quarterly) for timely monitoring of compliance with the guideline and its effects on service delivery profiles.
>
> ***Routine monitoring*** works with data contained in treatment facilities' automated information system, which typically are limited to encounter records for outpatient visits, inpatient stays, prescription drugs, and use of ancillary services such as laboratory, radiology, physical therapy, and other diagnostic or therapeutic services. Encounter data provide timely feedback for treatment facilities to guide implementation actions and for monitoring performance systemwide. These data are not useful for measuring outcomes of care, however, because they do not contain information on the patients' clinical status. Moreover, measures of the quantity and timing of services based on these data may be misinterpreted in the absence of direct information on the patient status or the clinical judgments that underlie the observed service activity.

The guideline team recommends two sets of indicators, which are intended to be used together as a coordinated system of measures. The ***highest priority indicators*** address the key aspects of the process of care and clinical outcomes for low back pain patients, as specified by the practice guideline. Special studies are required to measure these indicators. The guideline team has determined that, to effectively monitor care for low back pain patients, it is necessary to work directly with a level of clinical detail that is currently only available in clinical charts and related documents. The ***other priority indicators*** measure the use of ancillary services by low back pain patients. These indicators can be monitored on a regular basis because they rely on the automated encounter data maintained by DoD and VA treatment facilities. They may be used to identify service activity patterns (positive or negative) that merit detailed examination with special studies that have access to additional information on the underlying clinical care processes.

Highest Priority Indicators

The low back pain guideline team recommends four indicators that it identified as the highest priority indicators. These metrics are presented in Table 1 along with the average rating scores they received during the team's indicator selection process. In addition to the indicator ratings, the following priority considerations shaped the guideline team's decisions on these indicators:

- ***Identifying serious conditions*** – one of the key guideline elements is to quickly identify patients with serious health problems that present as low back pain and get them into proper treatment. It is important to ensure that clinicians are performing this evaluation routinely and correctly.
- ***Functional outcomes*** -- the goal is to help the low back pain patient return to the best possible functional status. Function outcome measure(s) should be specific to this patient population.
- ***Mix of clinical and patient-oriented indicators*** -- Processes of care and outcomes can and should be judged by both clinicians and patients. Establish a set of indicators that balance these perspectives.

- ***Actions not requiring clinical judgments*** -- Several aspects of the guideline state directly that the clinician should take specific actions if certain conditions are met (mandatory actions). Compliance with at least some of these provisions should be monitored to assess levels of behavior change.

TABLE 1

Highest Priority Indicators Recommended for Special Study Monitoring

Guideline Element	Indicator	Indicator Type	Monitoring Method	Average Score
Identify red flag conditions	***Percentage of new LBP patients who are evaluated appropriately for red flag conditions in the initial visit, including history and focused physical examination***	Process of Care	Special Study	8.5 *
Conservative treatment; Patients who do not improve	Average improvement in disability for acute low back pain/sciatica patients, as measured by Oswestry LBP instrument	Clinical Outcome	Special Study	8.3
Conservative Treatment	Level of patient satisfaction with amount of education and instruction provided for LBP care	Patient Satisfaction	Patient Survey	8.2
Treatment of Chronic Sciatica	***Percentage of LBP patients with radicular pain at ≥6 weeks duration, and a positive imaging study, who are referred to a surgical specialist***	Process of Care	Special Study	Not scored

NOTE: indicators established by the DoD/VA Working Group are highlighted.

* This score was given to an indicator for performance of a neurological examination at the initial visit for low back pain patients, which was replaced with the more comprehensive metric presented here.

The indicator for evaluation of new low back pain patients for red flag conditions was defined to encompass all of the history and physical examination activities performed during the initial primary care visit. It is an expansion of a candidate indicator for performance of neurological examinations, which received the highest priority rating. The team preferred to include all the evaluation tasks in this indicator because they address a variety of important red flag conditions. The evaluation activities can be recorded on a documentation form in the medical chart, which can be analyzed in a special study to measure the indicator.

The team does not recommend any indicators to monitor the incidence of selected red flag conditions, (e.g., cancer, infection, cauda equina) because the incidence of these conditions is too low to monitor effectively. The team decided it was more important to verify that clinicians screen for these problems than to attempt to monitor timeliness or frequency of referrals of patients with those conditions.

In selecting the indicator that uses the Oswestry low back pain instrument to measure improvement in disability, the guideline team concluded that this measure is preferable to other generic measures (e.g., SF-12) because it provides information that is specific to low back pain. There are several versions of the Oswestry instrument, which contains 10 questions to be answered by the patient. Care should be taken to work with the best version. In addition, the method used to collect data for this metric should be designed

to (1) ensure complete "before and after" data is collected, and (2) protect providers and treatment facilities from undue administrative burden. Options being considered include using a subset of the most important questions, and incorporating the Oswestry questions into clinical forms already in use.

The indicator on patient satisfaction with education and instruction on managing low back pain was one of three highly rated indicators that would be measured using patient survey data. The team limited its choice to one indicator -- the highest rated one -- in the interest of balancing patient perceptions and the technical aspects of clinical care for low back pain patients. Other patient measures also could be monitored as part of the survey used to collect data for this measure. Two possible approaches for collecting the survey data are to over-sample low back pain patients as part of an existing survey or to field a special survey of low back pain patients. It may be necessary to use special surveys if the percentage of the patient population with low back pain is small.

The last indicator addresses one of the "mandatory" provisions in the low back pain guideline that calls for referral of a chronic sciatica patient to a surgical specialist if (1) the back pain has continued more than 6 weeks and (2) results of an imaging study are positive. The denominator for this indicator is all patients who have returned for a follow-up office visit with continuing pain, and who have had a positive imaging study. Special study methods are required to establish from medical charts whether imaging study results are positive or negative, and whether the patient was given a surgical specialty referral. Encounter data will document only that imaging has been performed, and that some patients have actually had visits with surgical specialists.

Other Priority Indicators

The low back pain guideline team recommends four indicators that it identifies as other high priority indicators, all of which measure use rates of ancillary services during the initial period conservative treatment for patients with acute low back pain or sciatica. These metrics are presented in Table 2 along with the average rating scores they received during the team's indicator selection process.

Table 2
Other Priority Indicators Recommended for Routine Monitoring

Guideline Element	Indicator	Indicator Type	Monitoring Method	Average Score
Conservative Treatment; Patients who do not improve	Percentage of acute LBP patients who are referred for physical therapy or manipulation	Process of Care	Routine	7.1
Conservative Treatment; Patients who do not improve	Average time from initial LBP visit until referral for physical therapy or manipulation for those who are referred	Process of Care	Routine	7.1
Conservative Treatment; Patients who get worse	Percentage of acute LBP patients for whom plain x-rays are obtained	Process of Care	Routine	7.0
Conservative Treatment; Patients who get worse	Percentage of acute LBP patients for whom CT scan or MRI are obtained	Process of Care	Routine	6.8

The team hesitated to include these indicators in its recommendations because team members were concerned that the measures would be misinterpreted or create inappropriate incentives for service efficiencies that conflict with clinical needs. The team determined that it is important to monitor at least some indicators of service activity on a regular basis, despite these concerns, but that the indicators should evaluated carefully and interpreted in conjunction with the recommended highest priority indicators that are more closely based on clinical information.

The two indicators for referrals to physical therapy or manipulation are intended to monitor the timeliness of referrals for these services. As stated in the guideline, these interventions are most effective when performed early during conservative treatment, and effectiveness declines with the elapsed time until intervention begins. The first indicator addresses the rates at which patients are referred for treatment, and the second one addresses the timeliness of those referrals.

The other two indicators monitor the rates at which imaging studies are obtained for acute low back patients during the period of conservative treatment. The intent of the guideline is to improve the appropriateness of use of imaging studies, and the emphasis on "appropriateness" brings in the aspect of clinical judgment as a provider orders these studies. An observed decrease in imaging rates is a good trend only if the reduction reflects elimination of inappropriate testing. Similarly, an increase in imaging rates may reflect an improvement in appropriate evaluations for red flag conditions. The team agreed that it is useful to monitor trends in use of imaging studies, with the caution that the observed results be interpreted carefully.

No indicators are recommended for use of NSAIDs or narcotic drugs during conservative treatment of acute low back pain patients. There was consensus among team members regarding the importance of this guideline provision, which encourages use of primary pain relievers before narcotics. There also was agreement, however, that the substantial amount of clinical and patient judgments involved in medication decisions would make it extremely difficult to interpret any observed changes in patterns of prescription drug activity. Therefore, the indicators would not offer useful information for monitoring guideline implementation.

ISSUES TO ADDRESS FOR EFFECTIVE MONITORING

During its deliberations on indicators and measurement processes, the low back pain guideline team examined several issues that not only influenced the team's indicator choices but also will affect the monitoring process. These issues are presented here for consideration during the next steps of the monitoring process - establishing the measurement protocols and data collection processes.

1. In any monitoring activity, the concept of "appropriateness" should direct decisions on the indicators to be monitored and interpretation of related data. Although trends in activity rates can provide useful monitoring information, final judgments on quality of care or compliance with a guideline must be grounded in the appropriateness of that activity based on clinical considerations.

2. Where special studies are used to measure indicators, the necessary information must be available in the medical charts that will be extracted during the study. This need has implications for the treatment facilities, to ensure that they have prepared adequately for collection of valid data on an ongoing basis. This may involve use of new forms or training of clinical staff on chart documentation standards.

3. In some cases, the local treatment facilities may be able to perform special studies on a regular basis, which would generate monitoring information more frequently than is possible for most special studies.

The medical charts are in the facilities, and they should take advantage of the information they possess to establish effective monitoring activities. Some of the techniques and tools they develop may be adapted systemwide.

4. Given the priority placed by the low back pain team on indicators that cannot be measured with traditional service utilization data, attention should be given to developing capabilities to allow the system to convert special studies into routine monitoring over time. The establishment of automated clinical charts would establish that capability. On an interim basis, it may be possible to automate specific tools, such as the Oswestry instrument.

5. The choice of indicators for monitoring guideline implementation usually differs from those used to evaluate the overall operational and financial impacts of guideline. Analyses of cost impacts quantify the dollar value of changes in service activities and generate estimates of the increase or decrease of costs attributed to each key element of the guideline. These measures, however, represent only one side of the health care equation; the other side is the effectiveness and appropriateness of care. These two dimensions are brought together in cost effectiveness studies, which consider the commonalties and tradeoffs involved in changing the way care traditionally has been provided.

ADDITIONAL INDICATORS FOR MONITORING ACTIVITIES

After selecting the priority indicators for DoD/VA use, the low back pain guideline team identified other indicators that rated highly in its indicator selection process. These indicators, which are presented in Appendix A, are offered for possible use by individual treatment facilities in their own monitoring processes as they implement the low back pain guideline. Several indicators are listed in each of three categories: process of care, clinical outcomes, and patient satisfaction. Also for reference, the worksheet with all the candidate indicators, and the ratings of the guideline team, is presented in Appendix B.

Attachment A. Indicators Suggested for Use by Individual Services or Health Care Facilities

Guideline Element	Indicator	Monitoring Method	Average Score
PROCESS OF CARE			
All	Percentage of clinicians who received the low back pain guideline	Routine	6.8
Conservative Treatment	Percentage of LBP patient charts that document patient education	Special Study	6.6
All	Percentage of LBP patient charts that contain a documentation form	Special Study	6.2
Conservative treatment; Patients who do not improve	Average time between first low back pain visit to first record of plain x-rays obtained	Routine	6.1
Conservative treatment; Patients who do not improve	Average time between first low back pain visit to first record of CT scan or MRI obtained	Routine	6.1
CLINICAL OUTCOMES			
Conservative treatment; Patients who do not improve	Percentage of acute low back pain/sciatica patients who progress to chronic, as measured by outpatient visits >6 weeks following initial visit for LBP	Routine	7.8
Conservative treatment; Patients who do not improve	Average number of days to full return to duty status for military personnel with low back pain/sciatica that results in restricted duty status	Special Study	7.5
Conservative treatment; Patients who do not improve	Percentage of military personnel with low back pain/ sciatica who return to full duty work within 6 weeks	Special Study	7.2
Conservative treatment; Patients who do not improve	Average improvement in Fear Avoidance Behavior Questionnaire (FABQ) score for acute low back pain/sciatica patients	Special Study	6.8
Treatment of Chronic Low Back Pain or Sciatica	Percentage of lost acute LBP patients with continuing disability >6 weeks after first visit, based on Oswestry score	Special Study	6.7
PATIENT SATISFACTION			
Conservative Treatment	General satisfaction with treatment for acute low back pain/sciatica	Patient Survey	8.0
Conservative Treatment	Satisfaction with extent of pain alleviation for acute low back pain/sciatica	Patient Survey	7.8

Attachment B. Candidate Indicators for Monitoring of Guideline Implementation
Diagnosis and Management of Low Back Pain

	Guideline Element	Calculation of Measure: Numerator	Calculation of Measure: Denominator	Data Source (Ref. DoD systems)	Type of Monitoring*	AVERAGE SCORE (0 to 10)
PROCESS OF CARE						
Percent of first visits for LBP in which a neurological exam was performed	Identify red flag conditions	Number of first LBP visits in denominator with neurological exam performed	Number of first visits for patients with low back pain	Chart Abstraction	Special Study	8.5
Percent of acute LBP patients who are referred for physical therapy or manipulation	Treatment of acute patients who do not improve	Number of patients in denominator who are referred to PT/***manipulation***	Number of patients with first visits for low back pain	Ambulatory Care (ADS) Data	Routine	7.1
Average time from first LBP visit to physical therapy/manipulation referral **for those who are referred**	Treatment of acute patients who do not improve	Sum of weeks from first LBP visit to PT/***manipulation*** referral for all LBP ***patients*** in denominator	Number of patients with LBP first visits ***who are referred for PT/manipulation***	Ambulatory Care (ADS) Data	Routine	7.1
Percent of acute LBP patients for whom x-rays were obtained	Conservative Treatment	Number of patients in denominator who had x-ray procedures	Number of patients with first visits for low back pain	Ambulatory Care (ADS) and CHCS Ancillary Services Data	Routine	7.0
Percent of primary care clinicians who received the LBP guideline	All	Number of clinicians in denominator who opened the guideline on the web or attended a LBP session	Number of primary care clinicians in the treatment facility	Computer Logs and attendance lists of LBP sessions or conferences	Routine, Time Limited	6.8
*Percent of LBP patients coded as cancer within 6 weeks **(shorter time)** of first LBP visit who are referred to a specialist from first LBP visit*	Identify red flag conditions	Number of cancer patients in denominator referred to specialist from first LBP visit.	Number of patients coded as cancer within 6 weeks ***(shorter time)*** of first LBP visit	Chart Abstraction	Special Study	6.8
Percent of acute LBP patients for whom CT scans ***or* MRI** were obtained	Conservative Treatment	Number of patients in denominator who had CTs ***or* MRIs**	Number of patients with first visits for low back pain	Ambulatory Care (ADS) and CHCS Ancillary Services Data	Routine	6.8
Percent of LBP patient charts that document patient education	Conservative Treatment	Number of charts in denominator that document patient education	Number of medical charts for LBP patients	Chart Review	Special Study	6.6
Percent of LBP patients coded as Cauda Equina within 6 weeks ***(shorter time)*** of first LBP visit who are referred to a specialist from first LBP visit	Identify red flag conditions	Number of Cauda Equina patients in denominator referred to specialist from first LBP visit.	Number of patients coded as Cauda Equina within 6 weeks ***(shorter time)*** of first LBP visit	Chart Abstraction	Special Study	6.5
*Percent of LBP patients coded as infection within 6 weeks **(shorter time**) of first LBP visit who are referred to a specialist from first LBP visit*	Identify red flag conditions	Number of infection patients in denominator referred to specialist from first LBP visit.	Number of patients coded as infection within 6 weeks ***(shorter time)*** of first LBP visit	Chart Abstraction	Special Study	6.4
Percent of LBP patient charts that contain LBP documentation form	All	Number of charts in denominator with LBP documentation form	Number of medical charts for LBP patients	Chart Review	Special Study	6.2
Average time from first LBP visit to first x-rays	Treatment of acute patients who do not improve	Sum of weeks from first LBP visit to first x-ray for all first LBP visits in denominator	Number of patients with first visits for low back pain	Ambulatory Care (ADS) and CHCS Ancillary Services Data	Routine	6.1
*Average time from first LBP visit to first CT scans **or MRIs***	Treatment of acute patients who do not improve	Sum of weeks from first LBP visit to first CT scan ***or* MRI** for all first LBP visits in denominator	Number of patients with first visits for low back pain	Ambulatory Care (ADS) and CHCS Ancillary Services Data	Routine	6.1

	Guideline Element	Calculation of Measure: Numerator	Calculation of Measure: Denominator	Data Source (Ref. DoD systems)	Type of Monitoring*	AVERAGE SCORE (0 to 10)
Percent of acute LBP patients for whom narcotics/benzodiazapines were prescribed 7+ weeks after initial LBP visit	Treatment of Chronic Low Back Pain or Sciatica	Number of patients in denominator with Rx for narcotics/ benzodiazapines 7+ weeks after first visit	Number of patients with first visits for low back pain	Ambulatory Care (ADS) and CHCS Pharmaceutical Data	Routine	6.1
Percent of acute LBP patients for whom narcotics/benzodiazapines were prescribed **<7 weeks after first visit**	Conservative Treatment	Number of patients in denominator with Rx for narcotics/ benzodiazapines **<7 weeks after first visit**	Number of patients with first visits for low back pain	Ambulatory Care (ADS) and CHCS Pharmaceutical Data	Routine	6.0
Percent of acute LBP patients who are referred for physical therapy	Treatment of acute patients who do not improve	Number of patients in denominator who are referred to physical therapy	Number of patients with first visits for low back pain	Ambulatory Care (ADS) Data	Routine	5.9
Percent of acute LBP patients for whom NSAIDs/muscle relaxants were prescribed 7+ weeks after initial LBP visit	Treatment of Chronic Low Back Pain or Sciatica	Number of patients in denominator with chart record of NSAIDs/muscle relaxants 7+ weeks after first visit	Number of patients with first visits for acute low back pain	Ambulatory Care (ADS), chart abstraction, patient survey	Special Study	5.9
Percent of LBP patient charts that contain numeric scale measures of pain severity	Conservative Treatment	Number of charts in denominator that contain numeric scale measures of pain severity	Number of medical charts for LBP patients	Chart Review	Special Study	5.8
Percent of acute LBP patients who are referred for manipulation	Treatment of acute patients who do not improve	Number of patients in denominator who are referred to manipulation	Number of patients with first visits for low back pain	Ambulatory Care (ADS) Data	Routine	5.7
Average time from first LBP visit to physical therapy referral for those who are referred	Treatment of acute patients who do not improve	Sum of weeks from first LBP visit to PT referral for all LBP patients in denominator	Number of patients with LBP first visits who are referred for physical therapy	Ambulatory Care (ADS) Data	Routine	5.6
Percent of acute LBP patients for whom narcotics/benzodiazapines were prescribed <4 weeks after initial LBP visit	Conservative Treatment; Patients Who Do Not Improve	Number of patients in denominator with Rx for narcotics/ benzodiazapines <4 weeks after first visit	Number of patients with first visits for low back pain	Ambulatory Care (ADS) and CHCS Pharmaceutical Data	Routine	5.3
Percent of acute LBP patients for whom NSAIDs/muscle relaxants were prescribed <7 weeks after initial LBP visit	Treatment of acute patients who do not improve	Number of patients in denominator with chart record of NSAIDs/muscle relaxants <7 weeks after first visit	Number of patients with first visits for low back pain	Ambulatory Care (ADS), chart abstraction, patient survey	Special Study	5.2
Percent of acute LBP patients for whom CBC or ESR tests were obtained	Conservative Treatment	Number of patients in denominator with ESR or CBC tests	Number of patients with first visits for low back pain	Ambulatory Care (ADS) and CHCS Ancillary Services Data	Routine	4.8
Percent of acute LBP patients for whom NSAIDs/muscle relaxants were prescribed <4 weeks after initial LBP visit	Conservative Treatment; Patients Who Do Not Improve	Number of patients in denominator with chart record of NSAIDs/muscle relaxants <4 weeks after first visit	Number of patients with first visits for low back pain	Ambulatory Care (ADS), chart abstraction, patient survey	Special Study	4.8
Average time from first LBP visit to physical manipulation referral for those who are referred	Treatment of acute patients who do not improve	Sum of weeks from first LBP visit to osteopath/chiropractic referral for all LBP patients in denominator	Number of patients with LBP first visits who are referred for manipulation	Ambulatory Care (ADS) Data	Routine	4.7
Average time from first LBP visit to first CBC or ESR tests	Treatment of acute patients who do not improve	Sum of weeks from first LBP visit to first CBC, ESR for all first LBP visits in denominator	Number of patients with first visits for low back pain	Ambulatory Care (ADS) and CHCS Ancillary Services Data	Routine	4.7
Percent of acute LBP patients for whom narcotics/benzodiazapines were prescribed before initial LBP visit	Conservative Treatment	Number of patients in denominator with Rx for narcotics/ benzodiazapines before first visit	Number of patients with first visits for low back pain	Ambulatory Care (ADS) and CHCS Pharmaceutical Data	Routine	4.5
Percent of acute LBP patients for whom NSAIDs/muscle relaxants were prescribed before initial LBP visit	Conservative Treatment	Number of patients in denominator with chart record of NSAIDs/muscle relaxants before first visit	Number of patients with first visits for low back pain	Ambulatory Care (ADS), chart abstraction, patient survey	Special Study	4.5

	Guideline Element	Calculation of Measure: Numerator	Calculation of Measure: Denominator	Data Source (Ref. DoD systems)	Type of Monitoring*	AVERAGE SCORE (0 to 10)
CLINICAL OUTCOMES						
Average improvement in disability for acute LBP/sciatica patients, as measured by Oswestry LBP instrument	Conservative Treatment; Patients Who Do Not Improve	Difference in Oswestry score between first visit and 3-week followup, summed for all acute patients	Number of patients with first visits for ***acute*** low back pain	Ambulatory Care (ADS) and patient Oswestry instrument	Special Study	8.3
Percent of acute LBP/sciatica patients who progress to chronic	Conservative Treatment; Patients Who Do Not Improve	Number of LBP patients in denominator with pain >6 weeks after first LBP visit	Number of patients with first visits for acute low back pain	Ambulatory Care (ADS)	Routine	7.8
Average number of days to full return to duty status for military personnel with LBP/sciatica that results in restricted duty status	Conservative Treatment; Patients Who Do Not Improve	Number of days on restricted duty for patients in denominator	Number of active duty military personnel on restricted duty status due to LBP/sciatica	Ambulatory Care (ADS) and person-level restricted duty status data	Special Study	7.5
Percent of military personnel with LBP/sciatica who return to full duty work within 6 weeks	Conservative Treatment; Patients Who Do Not Improve	Number of of patients in denominator with <6 weeks of sick call or restricted duty	Number of active duty military personnel on sick call or restricted duty status due to LBP/sciatica	Ambulatory Care (ADS) and person-level sick call, duty status data	Special Study	7.2
Average improvement in Fear Avoidance Behavior Questionnaire (FABQ) score for acute LBP/sciatica patients	Conservative Treatment; Patients Who Do Not Improve	Difference in FABQ score between first visit and 3-week followup, summed for all acute patients	Number of patients with first visits for ***acute*** low back pain	Ambulatory Care (ADS) and FABQ self-report instrument	Special Study	6.8
Percent of "lost" acute LBP patients with continuing disability >6 weeks after first visit, based on Oswestry score	Treatment of Chronic Low Back Pain or Sciatica	Number of patients in denominator with disability >6 weeks after first LBP visit, based on Oswestry score	Number of patients with first visits for acute low back pain and no follow-up visit >3 weeks after first visit	Ambulatory Care (ADS) and patient Oswestry instrument	Special Study	6.7
Incidence rate of new low back pain or sciatica patients among active duty personnel	Prevention and Self Care	Number of denominator population with first visits for low back pain or sciatica	Population of active duty military personnel in the service area	Population counts and Ambulatory Care (ADS) data	Routine	6.5
Incidence rate of new low back pain or sciatica patients among veterans in the service area	Prevention and Self Care	Number of denominator population with first visits for low back pain or sciatica	Population of veterans in the service area	Population counts and Ambulatory Care data	Routine	6.3
Average change in pain severity as measured by a numeric scale	Conservative Treatment; Patients Who Do Not Improve	Difference in pain severity score between first visit and 3-week followup, summed for all acute patients	Number of patients with first visits for ***acute*** low back pain	Chart Review	Special Study	6.2
Incidence rate of new low back pain or sciatica patients among veterans who are VA primary care patients	Prevention and Self Care	Number of denominator population with first visits for low back pain or sciatica	Population of primary care patients in a VA facility	Population counts and Ambulatory Care data	Routine	6.1
Average number of sick call days for military personnel due to LBP/sciatica	Prevention and Self Care; Conservative Treatment	Number of sick call days for patients in denominator	Number of active duty military personnel with first visits for ***acute*** low back pain	Ambulatory Care (ADS) and person-level sick call data	Special Study	5.6
Average improvement in physical and mental health status, as measured by the SF-12	Conservative Treatment; Patients Who Do Not Improve	Difference in SF-12 score between first visit and 3-week followup, summed for all acute patients	Number of patients with first visits for ***acute*** low back pain	Ambulatory Care (ADS) and patient SF-12 survey	Special Study	5.2

	Guideline Element	Calculation of Measure		Data Source (Ref. DoD systems)	Type of Monitoring*	AVERAGE SCORE (0 to 10)
		Numerator	Denominator			
Incidence rate of new low back pain or sciatica patients among dependents of active duty personnel	Prevention and Self Care	Number of denominator population with first visits for low back pain or sciatica	Population of dependents of active duty military personnel in the service area	Population counts and Ambulatory Care (ADS) data	Routine	4.8
Percent of chronic LBP/sciatica patients referred to Medical Examination Board	Treatment of Chronic Low Back Pain or Sciatica	Number of patients in denominator with MEB referral	Number of LBP patients with pain >6 weeks	Ambulatory Care (ADS) and MEB referral records	Routine	4.6
Incidence rate of new low back pain or sciatica patients among retirees or dependents	Prevention and Self Care	Number of denominator population with first visits for low back pain or sciatica	Population of retired military personnel and dependents in the service area	Population counts and Ambulatory Care (ADS) data	Routine	4.5

	Guideline Element	Calculation of Measure: Numerator	Calculation of Measure: Denominator	Data Source (Ref. DoD systems)	Type of Monitoring*	AVERAGE SCORE (0 to 10)
PATIENT SATISFACTION						
Satisfaction with amount of education and instruction provided for LBP care	Conservative Treatment	Sum of ratings of satisfaction with education/information for patient sample	Sample of patients with first visits for acute LBP/sciatica	Patient Survey	Special Study	8.2
General satisfaction with treatment for acute low back pain/sciatica	Conservative Treatment	Sum of ratings of satisfaction with treatment for patient sample	Sample of patients with first visits for acute LBP/sciatica	Patient Survey	Special Study	8.0
Satisfaction with extent of pain alleviation for acute low back pain/sciatica	Conservative Treatment; Patients Who Do Not Improve	Sum of ratings of satisfaction with pain alleviation for patient sample	Sample of patients with first visits for acute LBP/sciatica	Patient Survey	Special Study	7.8
Satisfaction with administrative services during treatment for acute low back pain/sciatica	Conservative Treatment	Sum of ratings of satisfaction with administrative services for patient sample	Sample of patients with first visits for acute LBP/sciatica	Patient Survey	Special Study	4.8
Satisfaction with tests/special studies received during treatment for acute low back pain/sciatica	Conservative Treatment	Sum of ratings of satisfaction with tests/special studies for patient sample	Sample of patients with first visits for acute LBP/sciatica	Patient Survey	Special Study	4.5

Appendix C

PROCESS EVALUATION PLAN

DEMONSTRATIONS FOR PRACTICE GUIDELINE IMPLEMENTATION

Use of Practice Guidelines in the Army Medical System

Donna O. Farley and Shan Cretin, RAND

This evaluation plan describes the process evaluation being conducted by RAND's Arroyo Center in partnership with the Medical Command of the Army Medical Department as part of the project entitled "Evaluation of Practice Guideline Implementation in the Army Medical System." The purposes of the evaluation are to:

- Document the actions and experiences of the Army military treatment facilities (MTFs) participating in demonstrations for practice guideline implementation, and
- Identify areas where the policies, systems, and processes established to implement practice guidelines in the Army Medical Department can be strengthened.

PROCESS EVALUATION DESIGN

To capture the full dynamics of a process as complex as practice guideline implementation, it is important to take into account the roles and interactions of the many aspects of the system in which the guidelines are being implemented. Figure 1 is a diagram of relationships among the different levels of a military treatment facility in guideline implementation, the stakeholders involved, and the dynamics of the implementation process.

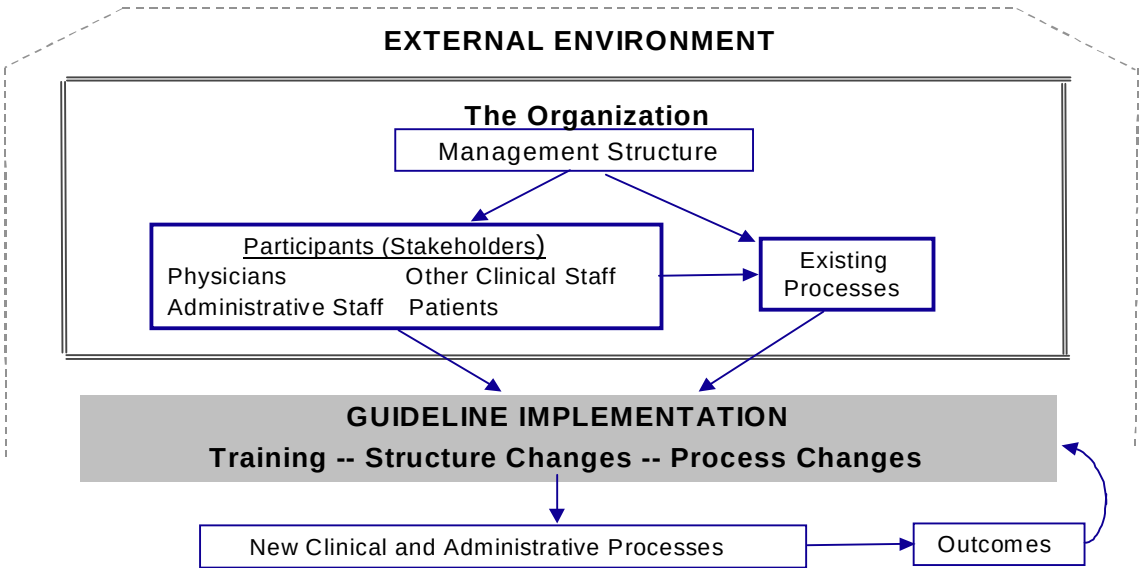

Figure C-1. Diagram of Factors Involved in Practice Guideline Implementation

A diversity of stakeholders need to be considered when implementing practice guidelines to ensure that implementers anticipate the potential impacts of new processes on the stakeholders and the responses that might be expected from them. These groups include the MTF command leadership, middle management, the clinical and administrative staff who are delivering care, and the patients obtaining that care. The implementation team itself consists of important stakeholders who not only are serving as team members but also have other job responsibilities at the MTF

Information will be collected about the actions involved in practice guideline implementation for the demonstration MTFs, the dynamics of the change process, and the responses of participants to their experiences with the process. Similarities and differences in the attitudes, motivations, and preferences of the stakeholders will be considered as the process evaluation information is collected and results are synthesized. The evaluation schedule and methods are designed to answer the questions listed below. To capture changes in the MTFs' organization and processes as guideline implementation moves forward, information will be collected at three times during the first year of the demonstration (Table 1).

The RAND team will use a participant-observer approach to work with the sites throughout the demonstration and evaluation. In addition to the site visits, an ongoing reporting system will be maintained and a communication process will be coordinated through which the sites can get assistance from each other, MEDCOM, and RAND. The sites will be asked to prepare regular monthly reports during the demonstration that document their progress in carrying out the initial implementation plan they developed at the kickoff conference.

Table C-1. Dimensions Addressed by Process Evaluation During the Demonstration

	Baseline	Month 3	Month 9
Structure and organization	X	X	X
Culture and climate	X		X
Current practices	X	X	X
Environmental context	X	X	X
Stakeholders' attitudes	X	X	X
Implementation plan		X	X
Changes in clinic processes		X	X
AMEDD support systems		X	X
Staff involvement		X	X
Patient roles and reactions		X	X
Monitoring progress		X	X
Effects on stakeholders		X	X

EVALUATION QUESTIONS

The various aspects of an MTF operation and environment that are depicted in Figure 1, and their interactions with guideline implementation, are the subjects of the process evaluation questions.

Environmental context and guideline implementation

1.1. At the time the demonstration started, how supportive of guideline implementation was the MTF culture and work climate? How much effect did the climate have on progress in practice guideline implementation?

1.2. How did the MTF culture and work climate change during the demonstration?

1.3. What other external factors occurred, such as deployments or other demonstration projects, and how did they affect guideline implementation?

Developing and Carrying Out an Implementation Plan

2.1. Which key elements of the practice guideline did the MTF identify as priority areas for actions to achieve clinical practices that are consistent with the guideline standards?

2.2. What information was used to identify these implementation priorities, and how were the decisions made?

2.3 How is the MTF's guideline implementation team organized and what types of staff participate as team members? Does the MTF have one or more guideline champions and what are their roles?

2.4 How does the implementation team operate to guide implementation activities and monitor progress?

2.5. How was the guideline introduced to the MTF clinical and support staff and how were they educated regarding the guideline contents and recommendations?

Planned Changes to Clinical and Administrative Processes

3.1. What changes to the MTF's clinical and administrative processes were identified as being necessary to achieve the practice guideline recommendations?

3.2. Which of the identified process changes did the MTFs actually implement?

3.3. What factors supported or hindered the planned changes?

3.4. How did the MTF teams change their implementation plans in response to opportunities or challenges that occurred during the implementation process?

AMEDD Systems for Guideline Implementation

4.1. How did the policy guidance and support provided by MEDCOM influence the MTF's progress in implementing the guideline?

4.2 Which materials and products developed for the implementation toolkit were most useful or least useful? What additional materials or other changes to the toolkit should be provided?

4.3 How important or useful to you is communicating or sharing ideas with other demonstration sites?

4.4 How useful was the information and communication capability provided through the Quality Management website and the Knowledge Management Network for the MTF's implementation activities? What features would be useful that are not currently available?

4.5 How do you assess the guidance or support provided by MEDCOM for monitoring progress in guideline implementation and associated metrics? What changes would be useful?

Clinical and administrative staff involvement and effects

5.1. At the time the demonstration began, what were the attitudes about practice guidelines and the AMEDD guideline initiative for each group:
- physicians
- other clinical staff
- administrative staff?

5.2. How did physicians, other clinical staff, and administrative staff participate in team activities for development and execution of the MTF implementation plan?

5.3. How motivated were physicians and other staff to adopt new practices according to the guideline or to otherwise participate in guideline implementation?

5.4. What effects did the implementation of new processes have on physicians' workload and daily practice patterns? If any effects, how did physicians respond to these changes?

5.5. What effects did guideline implementation have on the workload or other demands placed on other clinical and administrative staff?

Roles and reactions of patients

6.1. How did patients respond to the new processes of care being used under the practice guideline?

6.2. How did clinicians, other clinic staff, and the implementation team manage patient reactions, both positive and negative?

6.3. To what extent did the patient education materials help patients become better informed about their health problem and how it should be treated?

6.4. What effect did implementation of the guideline have on physician-patient relationships?

Measurement of progress in guideline implementation

7.1. What indicators did the MTF implementation team select for monitoring implementation progress, and why did they choose those measures?

7.2. How have the capabilities or any limitations of the MTF's data systems affected the validity of the data collected and their ability to monitor implementation progress?

7.3. What did the team learn about implementation progress from their monitoring and feedback process, and what actions were taken to modify the implementation plan or actions?

7.4. How helpful is the MTF's monitoring process to clinical staff? How do they think it should be changed?

DATA COLLECTION

The methods that will be used to collect data for each evaluation question are summarized in Table 2. Process evaluation information will be obtained by RAND using a combination of qualitative and quantitative data collection methods. Interviews with individual participants, along with discussion sessions with the implementation team and other participants, will provide perspectives on the dynamics of the implementation process. The culture and climate survey will examine the environment within which guideline implementation is occurring and changes in the environment over time. Focus groups with stakeholders will assess their attitudes toward guideline implementation and how they participated or were affected by the implementation process.

MTF documents and materials also will be an important source of the information for the process evaluation. These include standard documentation of the MTF organization, management, policies, and procedures, as well as materials developed by the MTF's implementation team during the course of the demonstration. The implementation materials will be the primary source of documentation on the actions planned by the team, actual actions taken, and resulting events and monitoring results.

Table C-2. Data Collection Methods for Evaluation Questions

	Implement Materials	Monitor Reports	Individual Interviews	Group Discussions	Culture Survey	Focus Groups
Environmental context						
1. How supportive was culture and climate?					X	
2. How did culture and climate change?					X	
3. Other factors affect implementation?			X	X		X
The implementation plan						
1. What key guideline elements are priorities?	X	X	X	X		
2. What information to identify priorities?			X	X		
3. How is guideline team organized?	X		X	X		
4. How does guideline team operate?			X	X		
5. How was guideline introduced to staff?	X	X	X	X		
Planned changes to processes						
1. What process changes did MTFs identify?	X	X	X	X		
2. Which changes did MTFs implement?		X	X	X		
3. What factors supported or slowed changes?		X	X	X		
4. How were implementation plans changed?	X	X	X	X		
AMEDD systems for implementation						
1. Help from MEDCOM on implementation?		X	X	X		
2. How useful was implementation toolkit?		X	X	X		
3. How useful were KMN, communications?		X	X	X		
4. Help from MEDCOM monitoring role?		X	X	X		
Clinical, administrative staff effects						
1. Attitudes of MDs, other staff, at the start?			X	X	X	
2. MD and other staff roles in implementation?			X	X		
3. MDs motivated to adopt new practices?			X	X		
4. Effects of changes on MDs and responses?						
5. Effects on other staff workload, demands?						
Roles and reactions of patients						
1. Patients responses to changes in care?			X	X		X
2. How team managed patient reactions?			X	X		X
3. Helpfulness of patient education materials?			X	X		X
4. Effects on physician-patient relationship?			X	X		X
Measuring implementation progress						
1. Indicators the MTF selected for monitoring?	X	X				
2. MTF data system capability for monitoring?	X	X	X	X		
3. Lessons from monitoring and actions taken?		X	X	X		
4. Usefulness of monitoring to clinical staff?			X	X		

Appendix D
3-MONTH SITE VISIT REPORTS

The demonstration for implementation of the DoD/VA low back pain guideline is part of a project by the Army Medical Department (AMEDD) to test methods for implementing practice guidelines to achieve greater consistency in clinical practices across its health system. This demonstration is being fielded in four military treatment facilities (MTFs) in the Army Great Plains Region:

- William Beaumont Army Medical Center at Ft. Bliss, TX
- Darnall Army Community Hospital, at Ft. Hood, TX
- Evans Army Community Hospital at Ft. Carson, CO
- Reynolds Army Community Hospital at Ft. Sill, OK.

The purpose of the demonstration is to field test methods to make the practice standards in the DoD/VA low back pain guideline an integral part of the MTFs' ongoing health care delivery processes, and to use information generated by the demonstration to strengthen implementation methods. The low back pain guideline demonstration began in November 1998 with a kickoff conference at which teams from the four MTFs developed preliminary action plans for implementation of the guideline. Implementation activities began officially in March 1999, although some sites started sooner than that date.

Individual site reports summarize our findings from the site visit, by the following topics:

- The medical treatment facility: context
- Start-up and status of implementation
- Administrative procedures and issues
- Low back pain guideline
- Tool- kit
- Effects on clinical practices
- Metrics and monitoring
- Other issues

IMPLEMENTING THE LOW BACK PAIN GUIDELINE AT EVANS ARMY COMMUNITY HOSPITAL, FT. CARSON, CO

Early Findings from the AMEDD Guideline Demonstration
Report on RAND Site Visit of 16-17 June 1999

OVERVIEW OF THE SITE VISIT

This report summarizes the findings from RAND's first evaluation site visit to Evans ACH held on 16-17 June 1999, which was conducted by Donna Farley and Georges Vernez (RAND). They were accompanied by LTC Kathy Dolter (MEDCOM) and LTC Lovell and Joanna Schmith (CHHPM). The Evans ACH staff who briefed us or were interviewed for the evaluation are listed in Table D-1.

The format for meetings and interviews at this site visit differed substantially from the one used at the three other pilot sites. First, members of the Evans ACH low back pain team formally briefed us individually on their portion of the implementation. Therefore, unlike the other three sites, we had less time to meet with the low back pain team as a group for discussion of activities and issues the team has been managing. Second, interviews were conducted one-on-one with primary providers at the three TMCs on the post that were in varying stages of using the guideline and documentation form.

Implementation of the low back pain guideline at Evans ACH has just begun, and its strategy focuses exclusively on treatment of active duty personnel. For the clinics at the MTF that see both active duty personnel and other patients, the guideline is being applied only for the active duty patients. Also, as a site for the Army chiropractor's demonstration, the TMCs are offering all eligible back pain cases the option of using a chiropractor (most accept), and those who choose this option are not served by primary care providers. As a result, the opportunities for the primary care providers to actually use the guideline have been reduced. In addition, use of the guideline for chronic cases is reportedly impaired by long wait times to get an appointment for physical therapy (an average of 4 weeks).

FT. CARSON: CONTEXT

Ft. Carson is an active post. Deployments are frequent and several of its medical providers are deployed in Bosnia. Ft. Carson is also home for a field hospital.

Evans ACH currently serves a community of 65,000 at Ft. Carson through a network of two clinics located at the hospital (internal medicine and family practice) and three TMCs. Over the past year, the number of TMCs on the post has been reduced from five to three, and further consolidation of its medical services is being considered. The TMCs serve only active duty (AD) personnel, and the hospital-based clinics serve predominantly non-active duty beneficiaries. Evans also has a wellness center that offers education, support, health prevention, and other services to both active and non-active duty personnel. Back classes are offered at the wellness center.

On average, Evans ACH and the TMCs handle about 700 encounters per month for low back pain. Active duty personnel account for 65 percent of these encounters.

Ft. Carson is also a site for the Army chiropractic demonstration. All AD personnel with physical pain who meet the screening criteria are eligible to participate. The option to use chiropractic services is offered to patients, and the study protocol requires that the patient must be the one to make the choice. Once a patient decides to use chiropractic care, the TMCs are not to make any other medical interventions unless the patient is referred back to the TMC.

START-UP AND STATUS OF IMPLEMENTATION

Evans ACH made a decision to implement the guideline for AD personnel only. It was felt that the guideline is not well suited for the multiple ailment cases that typically characterize non-active duty patients. We were told that each TMC was allowed discretion for introduction of the guideline at its location, and they were given supplies of the Form 695-R and patient education pamphlets with a request that they use them for low back pain visits.

An initial round of training was given to all available medical personnel to make them aware of the guideline. Each clinic low back pain champion (internal medicine, family practice, and TMCs) held a training session with their respective medical staff. TMC personnel were the first to be trained in March. They were given the guideline, shown portions of the video, and told to "try to use the guideline in their practice." Overall, about 60 percent of providers attended a training session. Evans ACH plans to hold additional training sessions every six months.

Although primary care providers reported that they have no objections to the logic and content of the guideline, few appear to be using the guideline or the supporting Form 695-R on a regular basis. Several reasons appear to be contributing to lukewarm buy-in of the guideline by providers. Only a limited number of primary care providers appear to have been actively involved in designing or carrying out the implementation strategy. In addition, although 60-78 percent of providers attended training sessions, the interviews with TMC providers indicated that familiarity with the guideline among physicians varied widely. Some front-line providers reported they had not seen the guideline, while others were not familiar with part of the guideline, mostly for chronic cases. In addition, some physicians were not interpreting some of the guideline standards accurately. There also were varying perceptions by primary care physicians regarding how to use the Form 695-R.

Although use of the guideline by primary providers is lagging, awareness of the guideline and of the tool-kit items is greater among physician assistants (PAs) and medics. They are filling out the Form 695-R and using the patient education pamphlet to educate new back pain patients on conservative treatment and exercises. Also, the guideline is contributing to the efforts by Evans ACH to track its MEB cases more aggressively, and the guideline is being integrated into its occupational health activities.

Various factors seem to influence the effectiveness of guideline use at Evans ACH. First, TMC providers reported that the chiropractic demonstration limited their ability to treat low back pain patients, which some reported as being helpful because it lowered their workload. All low back pain patients who choose chiropractic care, and most AD personnel do so when offered the option, are eliminated from primary care providers' caseloads. Reportedly, the number of visits to chiropractor have been as high as 12 visits per case. Cases are referred to orthopedics for further evaluation if they have a red flag condition, or if primary care or chiropractic care are not successful.

A second factor may be the autonomy given to primary care providers in formulating an integrated treatment and implementation strategy. For instance, although the wellness center offers regular back classes, providers do not see it as a resource for patient education. Indeed, several providers indicate they prefer to do one-on-one education. Another example is the new disease management clinic, which had to work to gain acceptance by physicians as a resource for managing care for their asthma or diabetic patients.

A third factor, which affected the treatment of chronic low back pain patients, was the long wait — averaging 4 weeks — for physical therapy appointments. By comparison, the wait time for a chiropractor appointment is one week or less. Physical therapists suggest more responsibility should be placed on primary providers to emphasize education.

Evans ACH is using the low back pain guideline in occupational health for military and civilian hospital employees. As part of a preventive medicine ergonomics effort initiated by CHPPM, Evans has drafted a set of policies and regulations to prevent work-related injuries. In the coming year, ergonomics workshops will be held throughout the post and a system to track incidence of injuries by unit and MOS will be put in place. The Form 695-R is seen as providing relevant information for this purpose.

ADMINISTRATIVE PROCEDURES AND ISSUES

The Form 695-R is reportedly used for active-duty low back pain patients who do not prefer to go directly to a chiropractor in TMCs. We were not able to ascertain the degree of compliance with use of the form. Generally, the PAs and medics we interviewed were positive about Form 695-R and about the patient education pamphlet. At one TMC, the primary care provider indicated that medics had problem filling out the form properly. Rapid turnover of medics is part of the problem. At another TMC, medics have been trained to fill out the form. In this TMC, staff like the form as it made it quicker “to move people in the morning”. At the third clinic, low back pain patients are given the form and the nurses are responsible for being sure the form is completed.

Evans ACH uses four ADS codes for low back pain cases: 724.2 for low back pain cases and 724.1, 724.5 and 724.6 for Backache and other. It has not made any changes to its ADS bubble sheet to define a limited number of codes or to code for other specific aspects of low back pain or its treatment (e.g., code for back class or for acute versus chronic case).

LOW BACK PAIN GUIDELINE

Reportedly, providers attending the training session had no objections to the logic and content of the guideline. There appears to be an understanding of their usefulness, particularly as a reminder. At least one PA indicated that the guideline gave him more autonomy to order further treatment after six weeks without having to check with a physician first. The guideline also gives the MTF more direction to move ahead with MEB referrals. Finally, the availability of the guideline “takes the burden off doctors of doing something different from other doctors.” They can use the guideline to show the patient that is what they were to do.

Two issues were raised concerning the low back pain guideline. First, the guideline does not apply readily to multiple ailments. Evans resolved this issue by not using the guideline and

Form 695-R for such cases. A second issue is that the guideline standards may conflict with the Army disability system, most especially the PEB process.

TOOLKIT

Videos. Evans staff did not like the first version of the video, but they thought the second version was acceptable. The background information on the guideline briefing was seen as unnecessary (it was fast-forwarded at the training session). Particularly useful parts of the video were the step-by-step algorithm and the physical exam.

MEDCOM Form 695-R. A variety of criticisms of the form were raised, which in part may explain its sporadic use (see above). The criticisms include:

- Not enough space for notes
- No room to record history
- No room to record profile
- Not suited for second and subsequent visits
- Delete medication boxes
- Add a stick figure

Clinical staff also were concerned that some of the questions to be filled out by TMC patients may lead them to report worse back pain symptoms than they really had, to get out of duty requirements. The work history items were also thought to be of little value. On the positive side, some providers thought the back of the Form 695-R allowed the provider to move rapid through the algorithm during the clinic visit.

Patient Education Pamphlet. Most providers praised the pamphlet. The feedback from patients also has been good. The brochure is now available in each waiting and exam room used by internists and is available in each of the TMCs. Several of the providers indicate they prefer to educate the patient themselves.

Patient video. They reported that the back pain prevention video for patients had just been received at Evans a few days before the site visit, so most providers had not seen the video. The video was being shown in a TMC waiting room, however, as we entered it to interview clinical personnel at the TMC. The TMCs plan to show the video on a regular basis while patients wait. No comments were offered on its contents.

Additional Too-Kit Items. None suggested.

EFFECTS ON CLINICAL PRACTICES

To date there has been no reported effect on clinical practices. Indeed, providers said that they pretty much followed the guideline standards prior to its introduction. Monitoring documentation is not yet available to confirm the consistency of these practices. Internists indicate that checking for the “red flags” is part of their practice. At the TMCs, conservative treatment is the norm because the goal is to return soldiers to duty as soon as possible. The TMCs do not order x-rays in the first 6 weeks of treatment. Providers perform some education, but typically they do not refer patients to back classes at the wellness center.

METRICS AND MONITORING

Ft. Carson is collecting data on the following:

- Number of backache encounters by clinic and type of patients
- Number of MEB referrals

It has also developed a tracking system for MEB referrals with the intent to decrease the amount of time it takes to complete the process. Finally, Ft. Carson is doing a special study of temporary profiles in five units, which include low back pain patients, to help assess how they can improve the efficiency of decision making for personnel who are candidates for MEB.

Measuring the effect of the low back pain guideline will be particularly difficult. In the short term, an appropriate outcome measure may be changes in the number of lost duty days due to low back pain.

OTHER ISSUES

In addition to the issues raised in each of the topics above, a number of additional issues were raised:

Education of Providers. It was suggested that a most efficient and rapid way of implementing guidelines Army-wide would be to include them in the medical education of interns at the various (GME) my training hospital such as at Madigan: "Doctors do things the way they are trained".

I**nstitutionalization of Multiple Guidelines.** The medical leadership at Evans ACH sees little hope of successfully implementing the use of multiple guidelines in the Army short of developing an automated system that has easy on-line access to the guidelines and on-line feedback when users are not complying with guideline recommendations. Medical records also need to be automated to make the system more accountable and avoid repetition.

Incentives. The emphasis placed on the role of guidelines in saving money may be misplaced. The emphasis should be on guidelines' improving the quality of care. If they do that, savings will follow. But mandating savings up front is counterproductive. Also some of the savings can only be expected in the long-term (i.e. blindness associated with diabetes) and may not necessarily accrue to the post that provided the service (i.e. decline in return visits for LBP).

Variability of Temporary Profiles. There is reportedly a great deal of variance in low back pain temporary profiles at Ft. Carson.

Contractors. Ft. Carson uses a good number of contracted providers (e.g., neurosurgery downtown). If the Army wants contractors to use Army medical practice guidelines, that will have to be specified in their contracts.

Table D-1
Site Visit Participants from Evans Army Community Hospital

Participant	**Function**
COL Royce Solano	Facilitator, guideline champion
Juanita M. Phillips, R.N.	Administrative Practice Guideline POC
CPT Jonathan Ruwe	Clinical Support Division
LTC Albert Duncan	Internal Medicine Clinic
Ms. Jamie Wonnett, R.N.	Internal Medicine Clinic
LTC Steve Lang	Family Practice Clinic
1LT Denver Hager	Troop Medical Center #6
SFC Troy Ellis	Troop Medical Center #10
SSG Jeffrey Emry	Troop Medical Center #7
CPT Susan Romito	Physical Therapy

IMPLEMENTING THE LOW BACK PAIN GUIDELINE AT DARNALL ARMY COMMUNITY HOSPITAL, FT. HOOD, TX

Early Findings from the AMEDD Guideline Demonstration Report on RAND Site Visit of 14-15 June 1999

OVERVIEW OF THE SITE VISIT

This report summarizes the findings from RAND's first evaluation site visit to Darnall ACH held on 14-15 June 1999, which was conducted by Donna Farley and Georges Vernez. They were accompanied by LTC Kathy Dolter (MEDCOM), LTC Mary Lopez and Amy Haufler (CHPPM), and Ray Lopez (KMN). The Darnall ACH staff interviewed for this evaluation are listed in Table D-2.

Implementation of the LBP guideline at Ft. Hood had begun only a few weeks before our site visit. A first round of training of primary care providers had been completed. Implementation of the procedures for use of the guideline and use of the supporting tool-kit material varied broadly across Ft. Hood's many clinics. All, however, had embraced a decision to use the guideline to emphasize patient education and self-care as of the initial visit. Each clinic is designing procedures to implement this strategy that best fit its circumstances. Also, staff made various suggestions to render the process and the supporting tool-kit material more useful to providers.

FT. HOOD: CONTEXT

Ft. Hood serves a community of 135,000 through a network of 9 clinics, one located in the Darnall hospital and eight clinics and troop medical clinics (TMCs) located throughout the post. The clinics vary in size and staffing. The TMCs serve only Active Duty (AD) personnel while the clinics serve AD personnel, family members, and retirees. The clinics see an average of about 1,000 low back pain cases a month among AD personnel. Maternity care is a key component of the services of Darnall ACH. On average, the hospital delivers three babies daily.

Ft. Hood is an extremely active post. Deployments are frequent with medical staff moving with the troops. On the day of our visit, the post was giving medical exams to about 1,000 National Guard personnel in preparation for their being called for duty in Bosnia. The post also relies heavily on contract providers at some of its clinics.

START-UP AND STATUS OF IMPLEMENTATION

The low back pain guideline team at Darnall has made few revisions to the implementation plan it had devised at the kickoff meeting in November 1998. The team membership also remains the same with representation from all clinics, the nursing staff, and physical therapy. The clinics vary substantially in the patients served and their medical staff and other assets, leading Darnall to adopt a decentralized implementation strategy giving each clinic flexibility to adapt its specific procedures to its own circumstances.

The guideline team decided to place an emphasis on education and self-care for low back pain patients, a decision that appears to be shared by all participants. The strategy calls for all first time low back pain patients to be given the education pamphlet and to be referred to a low back pain class for education on self-care and exercise techniques. The long-term goals are to prevent recurrence of low back pain episodes (i.e. prevention) and to reduce referrals to physical therapy and specialists.

Implementation of the plan was significantly delayed for several reasons including unavailability of the low back pain guideline and toolkit materials until February 1999, subsequent focus of the implementation team on a visit by JCAHO, and deployment of some providers and units to Bosnia. Actual implementation began, reportedly slowly, in March with the training of providers. Clerical staff were not given training on the guideline and use of the tool-kit items (see next section).

Provider training was done sequentially at each clinic. The low back pain algorithm was sent to providers one week prior to each training session. In the session, the algorithm was reviewed briefly and part of the video was viewed. Emphasis was placed on discussing why it is good to encourage and facilitate patient self-care. Each clinic has a copy of the new low back pain CME video to make it available to providers for private viewing. One clinic's low back pain guideline champion gave one-on-one training of providers. Reportedly, about 60 percent of primary care providers have been trained.

The Darnall team reports a need to train the remaining staff and also for retraining activities. They have found it difficult to train contract and resource sharing providers and get them to use the guideline. The issue is one of incentives - these staff are paid by the number of patients they see. Hence, it is difficult to get them to spend time in training. To overcome this reluctance, Darnall is considering giving CME credits for the training. Also, by the end of the 1999 summer, rotation will bring a new group of providers to Darnall who will require training.

To carry out its emphasis on patient education, Darnall has developed the capacity to provide regular and frequent low back pain classes in all of its clinics. Each clinic now has a provider trained in low back pain education, with the training done by the physical therapy staff. A *Low Back Pain Education Teaching Guide* has been developed in recognition of the need to standardize the content of classes. The guide presents methods for conducting an education class for low back pain patients as well as reference material including two videos. They report there is need to further standardize low back pain classes throughout the post.

Darnall has also developed a short (5-7 minutes) video for its emergency room (ER) staff, who are trained to refer all incoming low back pain patients to a primary provider. Physical therapy will not accept an ER referral.

ADMINISTRATIVE PROCEDURES AND ISSUES

The Darnall implementation plan calls for the Form 695-R to be filled out at the initial visit and placed in the chart. Also, every first time low back pain patient is to be handed a copy of the education brochure and referred to take a back pain class.

To date, this procedure has been implemented unevenly across the nine clinics or TMCs at Ft. Hood due to variations in acceptance of the procedures, availability of administrative support, and effects of clinical physical layouts on patient privacy. In some clinics, the medic or the physician assistant hands the form to the patient to fill out, and the form is then placed in the chart. In other clinics, where privacy is an issue, the form is filled out by a clinical staff person. In addition, there is still a great deal of resistance to use of the form at some TMCs, especially if there is insufficient administrative support. At least one TMC was not using the form at all.

Consistency in placing the form in the patient chart appears not to be an issue at the TMCs. When Active Duty personnel arrive at the post, they are assigned to a TMC and they hand in their medical chart to be kept at the TMC. As elsewhere, charts are not always available for every visit to a primary provider because they may have been left behind with a specialist.

Providers' use of the Form 695-R is reported to be uneven. Some providers we interviewed indicated that the form does not have adequate space for write-ins or does not contain some information they deem important. These providers continue to use the SF-600 to record their entries and attach the Form 695-R as an overlay.

As of our visit, a few back pain classes had been held. There was a very high rate of no-shows to these classes, exceeding 50 percent. These high rates are seen in part as a marketing issue. Patients may not perceive the class to be an integral part of their treatment. Darnall is considering several actions to overcome this perception. Primary care providers need to be reminded that they must forcefully communicate this message to their patient. Physical therapy is considering mandating attendance of class as a pre-condition for providing physical therapy. Also, the back pain class may be renamed "physical therapy" class to indicate to the patient that attendance of the class is a component of his/her treatment.

Part of the problem with no shows may also lie with the soldiers' units. A follow-up system would help assess this potential problem and devise appropriate remedies. Finally, wait times to the next available class may be an impediment. Consideration is being given to coordinating classes held at the various clinics and to send patients to the first available class.

A few other issues surfaced in the discussions:

On-going training of administrative staff. To date, administrative staff have been told to fill out the Form 695-R or have the patient fill it out, but they have not been trained in how to work with the form. Due to frequent rotations, especially of medics, on-going training is needed.

Use of the Form 695-R after the first visit. Several providers felt it is overkill to use the form at every visit. They suggested that a simpler follow-up form be developed.

Turnover of back pain class instructors. Concern was raised that potentially high turnover of instructors for back pain classes might become an issue. Use of civilians as class instructors might minimize this problem.

Coding of the ADS bubble sheet. Ft. Hood uses two codes on the ADS form for low back pain cases: 724.2 for acute and chronic low back pain and 724.3 for acute and chronic sciatica. Attendance at a back pain class is also recorded on the ADS as a separate code. The coding is generally done by nurses. No issues were reported with the coding.

LOW BACK PAIN GUIDELINE

Primary care providers, physical therapists, and nurses generally have responded positively to the low back pain guideline. Its emphasis on conservative treatment was seen at Darnall as an opportunity to emphasize prevention and patient self-management and to minimize referrals to physical therapy and specialist. It is believed that the guideline will contribute to increasing the quality, continuity, and consistency of care.

No specific issues with the logic and content of the guideline were identified. One exception was a concern raised by several primary care providers that some questions answered by patients on the Form 695-R may encourage them to exaggerate their back pain history or symptoms. These providers have noticed that an increase in the incidence of low back pain cases typically coincide with a forthcoming deployment or physical training test, and they have a heightened sensitivity to soldiers using back pain as a means to get out of unwelcome assignments.

Providers indicated it would be useful to clarify the decision point for referrals to MEB, which would make such referrals more uniform. There is, however, a need to maintain some flexibility to distinguish between committed and not-so-committed soldiers.

TOOLKIT

Videos. Ft. Hood staff were not shown the first CME video. All who saw the second video rated it as excellent. Now every clinic has a copy of the video so providers can view it at their leisure. As noted above, Ft. Hood also developed its own video for ER staff to emphasize that all low back pain cases coming to ER must be referred to a primary provider.

MEDCOM Form 695-R. Replacement of the regular SF 600 by the LBP 695-R form is not yet widespread. Providers think it is important for the form to be just one sheet. At the same time, they suggested several additions to make the form more useful to them:

- Add more space for free write-in
- Add a box to record whether patient attended a LBP class
- Add a box for social security number
- Add more space for vital signs, especially space to note allergies
- Provide more space to document treatment plan
- Eliminate medication boxes and leave space to write-in medications.

Although providers think the form is useful to fill out at the first visit, they question its usefulness at subsequent visits. If the initial form is in the chart, as it is likely to be at the Darnall TMCs, filling out a second form is perceived as being redundant. When asked whether the pain scale filled out by the patient might be useful to capture changes between visits, several providers indicated that the scale was too subjective to be of much use to them.

Patient education pamphlet. It was liked by everyone.

Additional toolkit items. No new items were suggested.

EFFECTS ON CLINICAL PRACTICES

The low back pain guideline has led Darnall to shift its back pain treatment practices from an emphasis on physical therapy to an emphasis on patient education and self care. They believe that 90 percent of cases can be treated this way if patients follow the conservative treatment and do the exercises. The Darnall team has put in place the enabling conditions to implement this shift in emphasis, i.e. appropriate procedures and decentralized availability of back pain classes at each clinic and TMC. Initial experience with the new practices suggest varying, but increasing compliance. Also, monitoring has been put in place to identify compliance issues (see discussion below). It is expected that there will be reductions in referrals to physical therapists and specialists and, in the long-term, there will be fewer return cases due to re-injury or recurrent episodes of pain.

The Darnall team believes that the guideline will contribute to identifying chronic low back pain cases in a more timely and uniform manner, but they do not expect the guideline to affect their handling of those cases. Chronic cases are referred to orthopedics for review, profiling, and eventual disposition. Orthopedic providers manage this process, including MEB referrals. Very few cases are referred for surgical assessment, and those that are referred are made to either downtown providers or to Brooke AMC.

METRICS AND MONITORING

Darnall has put in place a monitoring process of its referrals to back pain classes. The measures they monitor are tabulated and reviewed on a weekly basis. They are also tabulated by clinics. They are tracking:

- number of visits for low back pain
- number of referrals to back pain classes
- rate of attendance of back pain classes

The Darnall team also is assessing the appropriateness of referrals to Physical Therapy and the ordering of MRIs, and eventually they plan to assess the appropriateness of referrals to PEB and MEB. Darnall cannot currently do the latter because they can not obtain data on the specific reason (e.g., LBP, knee, etc.) for MEB referrals from the system records. Also, MEB statistics are aggregated for the region rather than reported by post.

OTHER ISSUES

In addition to the issues raised in each of the topical areas covered above, the following issues were discussed during our visit:

Communications. Staff at Darnall AMC expressed an interest in communicating and exchanging experiences with other sites. As of now, there is a great deal of variation in access and use of computers for the hospital personnel. To be effective, cross-site communications must be easy, and multiple media should be used.

Institutionalization of multiple guidelines. Ft. Hood staff are concerned that the medical system as currently designed is not suited to the implementation of multiple guidelines. They believe that if guidelines "do not make life easier, they will not be used". Automation is seen as a prerequisite to integrating multiple guidelines into their clinical practices. Automation in this context is conceived as easy electronic access to the various algorithms on screen via desk computer or palm computer.

Table D-2
Site Visit Participants from Darnall Army Community Hospital

Participant	FUNCTION
COL James Leech, DCCS	Deputy Commander, Clinical Services
COL Steven Markelz	Hospital Chief of Staff
COL James Miller MD, C, RAD/UM	Guideline Champion
LTC Vickie Belcher, C	Physical Therapy
MAJ Richard Butler, MD, ED	Physician, Emergency Medicine
MAJ Kirk Eggleston, MD	Bennett Clinic
MAJ Keith Hiatt, MD	TMC 12
CPT Samuel West, MD	TMC 10
CPT Cory Costello, MD	TMC 6
LT Valencia Hall, PA	Monroe Clinic
LT Melissa Murphy	Physical Therapy
SSG Reginald Howard, NCOIC	Monroe Clinic
SFC Donald Coatney, NCOIC	Cove Clinic
SFC Barbara Jordan, NCOIC	TMC 6
SFC Peter Seigle, NCOIC	Ambulatory Nursing Care
SFC Dominick Todisco, NCOIC	FCC-Killeen
Beverly Duncan, RN	Head Nurse FCC-Darnall
Patricia Leonard	Utilization Management
Linda Lloyd	Quality Improvement – Facilitator
Barbara Melikan, RN	Utilization Management
Benita Stone, clerk	FCC-Darnall
CPT Michael Burbidge	TMC 12
CPT Franklin Hauger, MD	FCC-Killeen
LT James Hornberger, PA	Monroe Clinic
Howard Vinson, PA	TMC 6
CPT Kerrie Golden	Physical Therapy
COL Karen Wilkins, RN, ADON	Assistant Deputy, Department of Nursing
LTC Diana Ruzicka, C	Operations and Deployment

IMPLEMENTING THE LOW BACK PAIN GUIDELINE AT REYNOLDS ARMY COMMUNITY HOSPITAL, FT. SILL, TX

Early Findings from the AMEDD Guideline Demonstration Report from the RAND Site Visit Conducted on 6-7 May 1999

OVERVIEW OF THE SITE VISIT

This report summarizes the findings from RAND's first evaluation site visit to Reynolds ACH held on 6-7 May 1999, which was conducted by Donna Farley and Georges Vernez. They were accompanied by LTC Kathy Dolter (MEDCOM) and by Ray Lopez (KMN). The Reynolds ACH staff interviewed for this evaluation are listed in Table D-3.

After a tentative start, Ft. Sill's medical staff is now using the LBP guideline in all of its clinics. The guideline and the tools provided to implement them were found to be generally useful. In particular, the MEDCOM Form 695-R was found to be easy to use and to save time for primary care providers. As implementation proceeded and learning took place, changes to procedures and forms have been made to adapt the process to local conditions and constraints. Also, use of the guideline to-date has highlighted broader procedural/administrative and clinical issues that need to be addressed.

FT. SILL: CONTEXT

Reynolds ACH serves an extremely varied population. In addition to serving about 12,000 active duty personnel, Reynolds serves in excess of 30,000 dependents and retirees. Ft. Sill is one of the few posts that has an even mix of FORCECOM and TRADOC active duty personnel. The TRADOC personnel present a unique set of treatment issues as the trainees stay on post only 9 weeks. Reynolds also is participating in the Medicare subvention demonstration for DoD beneficiaries age 65 or older.

Reynolds ACH has two family clinics that handle both sick calls and regular outpatient visits. Both clinics are located in the hospital, which has a 150-beds capacity. A troop medical clinic (TMC) located on the post serves only basic trainees. Starting this summer, Ft. Sill will also train female troops, which will require making changes in the configuration of the TMC. Finally, Reynolds has a number of specialized clinics including podiatry, orthopedics, audiology (occupational health), internal medicine, EENT, surgery, and psychiatry. All of these clinics are located in the hospital with the exception of psychiatry.

Reynolds has a strong primary care capability. With quite high visit rates per staff person, there is pressure to keep visit time short, particularly in primary care. Low back pain is the second highest volume of sick call visits (about 30 percent). The clinics see about 750 low back pain cases a month, and about 150 of those cases become chronic and eventually require referral to specialists.

Reynolds already is using guidelines for acne, hypertension, diabetes, lipids, asthma, depression, and GERD. Its Command is strongly supportive of managed care and of efforts to standardize clinical practices. As of now, however, Reynolds personnel have limited access to computers and, therefore, they work primarily with paper records.

START-UP AND STATUS OF IMPLEMENTATION

Reynolds has a central guideline team consisting of a core team that coordinates the implementation of all guidelines. Other members are added to the team as needed for each specific guideline. Following the November kickoff meeting, the first step taken by the leadership team was to restructure the low back pain team membership to include all relevant disciplines.

MEDCOM delays in completing the guideline and providing toolkit materials, as well as "defective" items sent from CHHPM, rendered initial implementation and buy-in difficult for the MTF. At the time of the site visit, some of the promised supporting material had not yet been received (e.g., pocket cards), and these delays resulted in some lost momentum. In retrospect, the timing of the kickoff meeting in November was premature.

Actual implementation of the guideline began with a half day training session of primary care providers on March 1999. Trainers reviewed the purpose of the guideline and used the video to focus on key guideline and examination items. Because they were working with the original video that had poor sound quality, they turned off the sound, and local doctors narrated the video. Providers raised concerns about potential loss of autonomy (cookbook medicine), and they were concerned that using the guideline would lengthen clinic visits.

Primary care physicians were concerned that use of the MEDCOM Form SF 695-R would increase their workload within the limited time available for each clinic visit. To address these concerns, the Form 695-R was piloted by a small number of primary care providers in the TMC clinic. They concluded that not only was the form easy to use, but it also allowed faster processing of patients.

Reynolds then proceeded to implement the guideline and to use Form 695-R in the clinics, first for appointment visits and then for sick call. The occupational health clinic also uses the guideline to treat patients with low back pain resulting from workplace injuries. Use of the guideline has not yet been extended to the VA clinic located in the Reynolds hospital. However, the Reynolds team wants the VA clinic to use the guideline because it serves many Army low back pain patients.

ADMINISTRATIVE PROCEDURES AND ISSUES

To date, use of the Form 695-R had no major effect on clinical administrative procedures. Nurses fill out the vital signs section, and the patient fills out the patient section while waiting in the screening room. There was initial resistance from nurses about having to fill out the form. They did not understand its purpose well (nurses and administrative staff had not been trained on the guideline and toolkit items) and, like the physicians, they feared that it would take more time. Actual use showed that filling out the form generated no additional work for the nursing staff. A new form is filled out at every low back pain visit. Although some patients complain about having to fill out a new form each time, physicians use pain scale ratings over time to assess progress.

Procedures differ somewhat for appointment and sick call visits. In the appointment visits, the Form 695-R is filled out one-on-one with patients who indicate they came in for low back pain. For sick calls, the process is done in a group. The medic asks patients in the waiting room to raise their hands if they came in for low back pain. They are given the form and instructed as group on how to fill out the form. Reportedly this procedure works well.

Reynolds changed codes on the ADS bubble sheet to improve coding consistency for low back pain visits. Their revised ADS form provides only one low back pain code (the lumbago code) and also has codes to designate back pain status as "less than 6 weeks" (acute) or "more than 6 weeks" (chronic).

A number of clinical procedural and training issues surfaced during our interviews:

"Right on time" and late arrivals. For these patients, there may be no time to fill out the patient portion of Form 695-R. In this case, the physician may fill out the form as the history is conducted, but it is "hit or miss".

Patients with multiple ailments. Reportedly, in about 8 of 10 appointment visits, patients have multiple ailments and rarely do patients report low back pain as the main ailment. In these cases, diagnosis will be made and a profile will be written up, but a SF-600 and bubble sheet (see below) may not be completed. As one doctor expressed it, "the guideline focuses on low back pain as the main ailment, rather than as one of many. However, many primary care patients report multiple ailments."

Forms may not get into the patient chart. Reynolds ACH has a systemic problem with inconsistent management of clinical records, with the result that patients' charts frequently are not available at the time of a clinic visit. Charts may not be available for various reasons such as a patient having possession of the chart but not bringing it to the appointment, pulling of charts for review or audits, or a chart being in another clinic that treated the patient recently. As a result, the provider will have the SF-600 or Form 695-R filled on the day of visit, but may not have access to the history of previous visits. A factor contributing to this problem is the inadequacy of available space to store all medical records, although reportedly they are working to expand this storage capacity.

Staff turnover. Rapid staff turnover at the clinics and TMC makes it difficult to keep everybody informed and educated about procedures and practices.

Coding quality. Inappropriate coding reportedly has been a chronic problem at Reynolds. Some of the coding on the ADS forms is done by coders and some is done by clinicians. PAD is chronically understaffed and coders are not well trained.

LOW BACK PAIN GUIDELINE

The clinical staff at Reynolds are positive about the logic and contents of the low back pain guideline. They like the emphasis on conservative treatment. In the words of one respondent "…the guideline lays out what to do and standardizes care, but also gives leeway for judgment". Use of the guideline also saves clinical time and has been particularly useful in sick calls. Finally, experience working with this guideline has helped change attitudes toward use of guidelines and has shown how they can help patients.

Some issues were raised related to the contents of the guideline:

Basic trainees. The guideline does not deal adequately with basic trainees who constitute half of the active duty population at Ft. Sill. Their short length of stay at the post (nine weeks) does not match well with the treatment timetable of the guideline. The approach to treatment also is different. With trainees who need to get back to training quickly or risk getting behind in their

training, the question the doctor has to ask is "will it harm him if I let him continue to train with the pain?" There are also trainees who come in with low back pain complaints to avoid having to train.

Prevention. Although the guideline does not cover prevention, Reynolds physicians felt that more needs to be done in this area (See further discussion of this issue under "Other issues").

Referrals to MEB. Questions were raised regarding when to refer for MEB review after the first six to nine weeks of treatment. Currently they wait six months. Guidance in this area would be welcome, but it should not be part of the formally published guideline. Physicians suggested that the PEB protocols be used to establish triggers for each disease process.

Chronic patients. Physicians are uncertain about how to manage chronic patients who still have pain but no radiating pain and no neurological symptoms. They are uncertain about when to use MRI versus CT scans.

Local constraints. The guideline assumes that the MTF has ready access to all specified diagnostic and treatment technologies. but this is not the case at Reynolds. Although they have access to an MRI outside the hospital, Reynolds has to pay for the exam and, hence, seeks to minimize its use. Instead, they are more likely to start by doing a CT scan. To accommodate this local constraint (and practice), the MTF has added a box for CT on the Form 695-R.

Presentation. In the presentation of the guideline, providers stated that the complete package was too large and unwieldy. Such bulky materials are not practical for ongoing use, after the initial briefing and training is completed. Reynolds providers prefer a short guideline algorithm that can fit on the side of one sheet and on a pocket card. It should focus on the key items from the perspective of the primary care provider — not the specialist. If need be, the algorithm should be broken down into several discrete parts to be more accessible. The back pain guideline, for instance, could be divided into two guidelines, one for acute care (less than 6 weeks) and the other for chronic care (more than 6 weeks). Such short algorithms are also useful to show patients where they are in their treatment, thereby improving patient buy-in.

TOOLKIT

The following toolkit items were discussed during the site visit: the provider CME video, MEDCOM Form 695-R, and patient education pamphlet.

Provider CME video. Reynolds used part of the video for training its primary care providers. They did not use the video narrative because of its poor quality; local physicians did the narrative during the training session. Reactions to the usefulness of the video were mixed. It was felt that the patient's exam was geared more to the specialist who can take longer to do the exam, whereas the primary provider has only a limited time and deals with patients with multiple problems. There is not enough recognition of this fact in the training material. Although it is useful to show all testing methods, more emphasis should be given to the essentials. It also was suggested that the models serving as patients in the video should look more like the people they treat so providers can relate to the instructions.

MEDCOM Form 695-R. The form has been found by the Reynolds clinical team to be a useful tool to integrate the guideline into practice and to document care. Initial concerns about the time it might take for nurses and physicians to fill out the form dissipated with practice. For

sick calls, the physician must see a patient every six minutes and the form helps them do that. The debates now are no longer about whether to use the form, but how to use it. Physicians find the pain scale useful for follow-up assessment of progress. As noted above, Ft. Sill added a box for CT scan to tailor it more to local practice and constraint. It was suggested that all forms should be made available on the web. Standard components should be accessible for local modifications with space for fields that local MTFs can use and change. It was also suggested that a stick figure be added to the form.

Patient education pamphlet. It was deemed useful for patients.

Additional tools? Several additional items were suggested that would further facilitate implementation of the guideline. They include:

- Wall posters showing the algorithm (suggested size of 11" by 13"). Reynolds has found posters to be effective for other guidelines they are using.
- Training materials geared to nurses and administrative staff, who should not be forgotten if buy-in and cooperation is desired.
- A prevention pamphlet for patients.
- A standardized profile form.

Ft. Sill's commander also would like to see a form developed for use in the patient chart that includes the guideline algorithm on the front and the history of visits and treatment on the back. The top of the chart would also include a check review sheet to make chart reviews easier. The desirability of a patient version of the guideline was discussed, but rejected, because of concerns about raising inappropriate expectations and potential liability.

Finally, questions were raised about who (MEDDCOM or the individual MTFs) would be responsible for reproducing and distributing the various toolkit items on a regular basis, and who should pay for them. We return to this issue under "other issues" below.

EFFECTS ON CLINICAL PRACTICES

Reynolds has only recently selected the metrics they will use to monitor the effects of using the guideline (see next section), so monitoring has not yet begun. Hence, reported changes in clinical practices were impressionistic. It is felt that the guideline is helping to standardize practices across physicians and it is assuring that all essentials are covered. As noted above, however, the low back pain guideline is not geared to basic trainees, and it is awkward to apply for patients with multiple ailments who fail to identify back pain as a problem at the outset of a visit. The proportion of repeat visits for low back pain reportedly is high because many patients do not follow the treatment.

Reportedly, referrals to physical therapy (PT) had not increased at Reynolds, but there may have been some increase in referrals to chiropractors. The decision to refer to physical therapy or a chiropractor, however, depends in part on provider and patient preferences, as well as on the timeliness of appointment availability.

Finally, there is a concern that MRI referrals for chronic low back pain patients will increase, given the guideline's emphasis on doing MRIs rather than CT scans. There was

sentiment among clinicians that CT is as effective as MRI for identifying underlying problems requiring treatment.

METRICS AND MONITORING

Reynolds has established a process for monitoring the implementation and eventual outcomes of all practice guidelines in use at the MTF. Feedback from guideline implementation actions, along with trend data, is provided to the monthly family practice meetings. Reports are also given to primary care, including family practice, pediatrics and emergency care, and finally to the command team. Metrics used follow the guideline's protocols closely. Also, Reynolds has an emphasis on prevention, and they develop their metrics from this perspective. Low back pain guideline activities are regularly placed on the agenda of the UM group monthly meeting.

Ft. Sill has initially decided to keep the number of metrics to a minimum. It will collect ongoing information on:

- Number of MRIs performed
- Number of visits for LBP by clinics
- Number of acute and chronic cases
- Frequency of visits per patient
- Number of profiles written

Data are available for all of these metrics. Because Reynolds has to use an external provider for MRIs, payment data are generated for all referrals. Data for the other four indicators will be taken from the ADS form, working with the new low back pain code and separate codes for acute and chronic cases. Over time, Reynolds plans to automate the ADS information. They also suggest that the coding used at Reynolds should be standardized across the system to eventually allow for comparisons across sites.

In addition to ongoing monitoring of the above indicators, Reynolds plans to periodically review a sample of charts and medical records. In this regard, however, there is a concern about the widespread incidence of incomplete records (see "Administrative procedures and issues" above). Another suggestion would be to record the unit of the active duty patients on the Form 695-R, which would allow eventual identification of the units that generate a disproportionate share of low back pain problems, to guide prevention efforts toward these units.

OTHER ISSUES

In addition to the issues raised in each of the topical areas covered above, several other issues were raised that are directly or indirectly related to the use of the low back pain guideline. They are briefly outlined below:

More emphasis on prevention. Reynolds believes that prevention ought to be part of the strategy for low back pain care. It is perceived that more education is needed, and in particular education should be emphasized in the field units. This issue, however, is in the hands of the unit commanders. Right now only three back stretching exercises are specified for physical training, and there is need for more. As already noted, analysis of the incidence of low back pain by units could help focus prevention efforts on problem units.

Incentives for use of guidelines and tool kit materials. At the time of the site visit, Reynolds needed additional copies of the various toolkit forms and of the patient education pamphlet. They raised the question of who would be responsible for printing, distribution, and payment for the material on an ongoing basis. The MTF's preference is for the material to be handled centrally (probably by CHHPM) rather than to be reproduced locally. It should be determined which approach is the most cost effective. Choice of approach also will affect MTF incentives to implement the guideline and use the associated education materials. If MTFs have to pay for the materials, their purchases may compete with the purchase of supplies for sick care, which could discourage them from using the materials.

Use of MEB for discharge of unwanted personnel. There was a perception that line commanders seek to use the PEB/MEB process to discharge personnel who would be more appropriately handled through administrative discharge.

Need for better mix of personnel. A question arose about whether Reynolds has the right mix of personnel to deal with its patient case mix. The demand for orthopedists reportedly exceeds the services that can be provided by the two orthopedists at the MTF and one other who rotates from Wilford Hall. Similarly, the MTF does not have a neurosurgeon. Patients who need to be evaluated by such a specialist have to travel to Brooke AMC, resulting in excessive lost duty days and TDY costs. A potential solution might be for a neurosurgeon to travel to see a group of patients at Reynolds, for example, every couple of weeks.

KMN. Access to computers as well as computer knowledge is relatively low at Ft. Sill. Consequently, information contained in the KMN system is simply not accessed. Access is too complicated and too slow.

Table D-3
Site Visit Participants from Reynolds Army Community Hospital

Participant	Function
COL Gary Ripple	Commander, Hospital
LTC Jay Kiser	Utilization Management
Dr. Jill Yanchick	Pharmacy
Ms Chris Hutchings	Resource Management
Ms. Debbie Gatlin (QM)	Quality Management
Ms. Roslyn Hodges	Head Nurse
LTC David Hammond	Chief, ER
CPT Chris Waring	Physical Therapy
Dr. Charles Webb	Sports Medicine
Ms. Susan Cramer	Occ Health
CPT Lance Rany, MD	Officer in Charge, FP2
MAJ Irvin Carty (NP)	NP, TMC
Sgt. Juan Moore	NCOIC, FP 1
Mr. Robert (Zip) Taylor, RN	LPN

IMPLEMENTING THE LOW BACK PAIN GUIDELINE AT WILLIAM BEAUMONT ARMY MEDICAL CENTER, FT. BLISS, TX

Early Findings from an AMEDD Guideline Demonstration

Report on the RAND Site Visit Conducted on 13-14 May 1999

OVERVIEW OF THE SITE VISIT

This report summarizes the findings from our first evaluation site visit to Beaumont AMC which was held on 13-14 May 1999. The evaluation was conducted by Donna Farley from RAND, who was accompanied on the site visit by LTC Kathryn Dolter (MEDCOM). The Beaumont AMC staff who were interviewed during the site visit are listed in Table D-4.

Although the guideline team expressed some frustrations at the slow start in implementing the low back pain guideline, they have been working steadily since the kickoff conference to prepare for and then carry out these activities. They began with provider education to bring physicians and other clinical staff into the implementation process. Then the staff in the various primary care clinics were trained on use of the MEDCOM low back pain documentation form, and they began using these forms to process clinic patients. At the same time, new procedures were being put into place to improve the way chronic back pain patients are managed and to apply the guideline to FECA patients in the occupational health clinic.

FT BLISS: CONTEXT

William Beaumont Army Medical Center (AMC) serves Ft. Bliss, TX, which is a large Army post with 12,000 active duty personnel and a total of 70,000 beneficiaries in its catchment area. The post is a center for air defense artillery, including an Army Air Defense Artillery School. Beaumont AMC is a small medical center that provides outpatient and inpatient health care services. About 25 percent of its inpatient care is provided to beneficiaries age 65 or older. The Consolidated Troop Medical Clinic (CTMC) serves active duty personnel, handling sick call as well as a variety of primary care and preventive services on an appointment basis. Within the medical center facility, there also are an Adult Primary Care Clinic and a General Outpatient Clinic that provide primary care services.

The historical focus of Beaumont AMC has been specialty care, offering a broad mix of specialty services and operating graduate medical education programs. Since implementation of TRICARE in April 1997, the medical center has been developing the primary care side of its operation, although many specialty physicians have been reluctant to accept this approach. They also report that a 25 percent cut in the MTF's budget several years ago has created stress as clinical and management staff strive to serve their patients with fewer resources.

The quality and utilization management staff had been working on introduction of practice guidelines and protocols before the low back pain demonstration began. Beaumont has implemented the Putting Prevention Into Practice (PPIP) protocol, and it is working with disease management guidelines for asthma, cardiovascular disease, and other conditions. The medical center is pursuing automation of its clinical records and other information systems to enable effective monitoring of service delivery activities.

START-UP AND STATUS OF IMPLEMENTATION

The implementation process started slowly at Beaumont AMC because momentum was lost as a result of delays by MEDCOM in sending sites the final guideline and supporting toolkit materials. The implementation team was re-constituted with the result that only 7 of the original 20 people sent to the kickoff conference are still involved with implementing the guideline. Along with the guideline champion, clinicians from the primary care clinics, occupational health, and physical therapy are team participants. Work is underway to implement the guideline in the CTMC, adult family practice clinic, general outpatient clinic, and occupational health clinic. They have attempted to work in ER with little success, and are beginning to work with the VA clinic. The current climate at Beaumont AMC is "guarded anticipation" about the low back pain guideline. The concept of the guideline is embraced by clinicians, but they are not yet sure about actual practices.

They have held educational sessions for all physicians who would be involved with the guideline, but have found that it is difficult to get all providers to attend the sessions. Thus far, attendance has been 80% for the CTMC, 20% for the emergency room (ER), 50% for family practice, and 100% for providers in the VA clinic. They also plan to undertake re-education of providers. The guideline team views the problem with ER participation as a resistance to change. The team's strategy is to wait for changes in staff to help build momentum for guideline acceptance, as new providers arrive and are oriented to the guideline as an existing practice.

The basic approach established for management of low back pain patients is to allow one week of conservative treatment for new acute patients, after which the patient may go for manipulation to help manage their back pain. After 3 to 6 weeks, depending on the nature of the problem, patients are referred to the physical medicine and rehabilitation (PMR) clinic for further evaluation and management. Physical therapy services typically are provided for chronic patients, although some services may be provided for acute back pain patients with a lot of pain. They also are working with line commanders at Ft. Bliss to help them understand prevention and treatment of low back pain.

Care for low back pain patients is being documented using the MEDCOM Form 695-R and a modified version of the ADS bubble sheet for outpatient encounters. They found it difficult to use only the 695-R form because of some missing items on the new form, so they are using it along with the SF-600. They are using a modified form right now that they generated at Beaumont. Medics at the CTMC are being trained to use the form instead of the SF-600. The adult primary care clinic is using the form inconsistently, and the ER refuses to use the form. The codes for mechanical low back pain on the ADS bubble sheet were standardized to use only two codes (724.3 and 724.5). They hope to automate the forms, but this has been delayed until the MTF completes its computer conversion to NT.

Several actions are focusing on care for chronic patients. Right after the kickoff conference, they decided that they needed to designate a gatekeeper for referrals of chronic low back pain patients to manage problems with too many referrals to specialty clinics. In particular, neurosurgery was receiving many patients and had a 2.5-month backlog of referrals. The PMR clinic is the gatekeeper, and now is using guideline standards to triage patients to medical or surgical specialists based on their status. The PMR clinic also is focusing the disposition process, including doing permanent profiles for some patients and moving forward on processing some for

Medical Evaluation Board. Provider training on the guideline includes instructions on where and how to refer to sub-specialties.

A new Tel-A-Nurse center began on 15 March. The center provides guidance on self-care and reassures patients they are getting the care they need. Low back pain patients have been only about 10 out of 800 calls received since the center began operation. The Tel-A-Nurse algorithm for low back pain was reviewed to be sure it is consistent with the DoD/VA guideline.

ADMINISTRATIVE PROCEDURES AND ISSUES

After the large reduction in Beaumont's budget several years ago, the MTF leadership is making strategic decisions on where to focus to save the most money and reinvest in other aspects of the system. They want to bring patients back from downtown care to save money. They believe that inpatient care is a good place to start, and also are looking at inpatient utilization review procedures as a source of savings. Because Beaumont has been a specialty hospital with long-term physicians, however, there is strong resistance to change. They are having problems recruiting primary care physicians, and the MTF gets no credit for resource sharing doctors because their contracts are through TRICARE instead of the MTF.

This environment is the backdrop for the medical center's guideline implementation activities. The leadership stated their support for the role of guidelines and the clinical standards they define, and their view that guidelines can yield long-term benefits, but they also stated that guideline activity is competing with many other initiatives that will save money. They seek to define an affordable approach that generates a return on the investment in guideline implementation. In this context, Beaumont is at the point of making decisions on the strategy for its QM/UM activities, with plans to move toward case management and an ambulatory care emphasis. With multiple guidelines on the horizon, they are examining how to work the guidelines into their program as the basic practice standards, rather than have them become an "overlay" on top of other activities.

A number of clinical procedural and training issues surfaced during our interviews:

Missing or incomplete charts. Many medical records are missing or documentation forms (SF-600 and 695-R) are not in them. Of 60 charts selected for an audit, only 37 could be audited because of either missing records or forms. They also need better documentation of the history and physical examination.

Administrative costs of guideline implementation. Putting a guideline into practice involves time by clinical staff as well as by the QM and UM functions that provide support for the process and perform related data analyses.

Need for quantitative support capability. The existing DoD data systems have made it difficult to establish a good system for monitoring clinical practices and progress in guideline implementation. Beaumont has placed a priority on finding ways to automate these processes, and to establish the statistical capability to perform these functions effectively, but it will be a while before such capability is in place.

Multiple ailment visits. Many patients served in the adult primary care and general outpatient clinics have multiple ailments, so low back pain rarely is the main ailment reported. In

these cases, diagnoses will be made, but the low back pain overlay form and ADS bubble sheet may not be filled out.

Staff turnover. Rotations of military staff will require regular re-education activities as new clinical and administrative staff enter the MTF. Once the guidelines become a regular part of business practices, new staff can be oriented to their practice standards along with all other clinical policies.

LOW BACK PAIN GUIDELINE

The individuals interviewed at Beaumont reported that the low back pain guideline is very good. It provides a consistent logic that has improved the efficiency of patient flow. The CTMC is screening for "red flags" for all acute low back pain patients. Criteria have been established for referral of acute patients for manipulation, working within the conservative treatment framework of the guideline. The guideline also has stimulated more appropriate management of chronic patients, including profiling and MEB processing for active duty patients.

Some issues were raised related to the contents of the guideline:

Physical therapy referrals and back school. A "marked up" version of the guideline is being used that adds two notes to clarify how they are processing patients at Beaumont. The first is a note for "physical therapy" next to Box 17 about continuing or modifying conservative treatment for acute patients whose back pain is not getting better. The term "assisted management" in the box is not a sufficiently direct reference to physical therapy. The second is a note for "back school" next to Box 16 that instructs about gradual return to activity for acute patients whose back pain is getting better.

Chronic patients. The algorithm for management of chronic patients involves a great deal of professional judgment by providers. The designation of PMR as the gatekeeper created one team to ensure consistent management of care for these patients, which has helped to resolve some clinical uncertainties. PMR also is identified on the "marked up" guideline as the agent to handle activities in Boxes 29, 32, and 33. PMR has established a multi-disciplinary team that reviews chronic patients who represent challenging problems. Committee membership comes from PMR, spine surgery, orthopedics, neurology, neurosurgery, and psychiatry.

TOOLKIT

During the visit the following tool-kit items were discussed:

Video. The original video was well received by physicians, although audio was poor on the physical exam demonstration. They also found that the exam demonstrated was a specialist's exam, and they suggest that it should be more representative of a primary care exam. The last part of the video about the psychosocial aspects of low back pain was not effective. The presentation should get to the bottom line, and not give an academic review of studies.

CME credit for physician education on the guideline. They want to know when CME credit will be obtained for the educational materials on the low back pain guideline video.

MEDCOM Form 695-R. Three issues have come up regarding use of the low back pain documentation form. (1) Should the form be used for just the first primary care visit or for all

visits? Maybe there should be a different form to use for follow-up visits with just the elements that change between visits. (2) How should they use the form and codes for patients who come in with multiple problems? (3) The boxes provided on the form are not sufficient to document the plan of care. They have changed the back of the form to add places for diagnoses, stick figure, Waddell's signs, referrals, back school, and laboratory tests. Space also is needed for writing notes so the SF-600 form can be eliminated.

Patient education pamphlet. The pamphlet has been well received, and it is used with every encounter in the wellness center. It reassures patients they are being treated all right during conservative treatment, and it provides good information on self-care and exercise.

Additional tools. They are looking forward to receiving the laminated pocket cards and the one-page (two-side) algorithm, which they said will be useful for Beaumont AMC physicians. In addition, Beaumont developed a standard physical profile form to make the profiling task easier for providers and reduce the number of "dead man" profiles that restrict all activities. They have found that 90% of the profiles given fit within this standard profile, and those that do not fit are given by noting changes on the standard profile form.

EFFECTS ON CLINICAL PRACTICES

Several possible impacts of the low back pain guideline were identified during discussions with the Beaumont team during the site visit. The MTF is encouraged to begin monitoring these items to assist in quantifying how the guideline is affecting clinical practices and costs.

Improved efficiency in clinics. The use of the MEDCOM Form 695-R and other toolkit materials has helped the clinics to process low back pain patients more efficiently, which could lead to higher rates of patient visits per provider (or other denominator) for the clinics. The CTMC is probably the strongest candidate for achieving this improvement because it processes large numbers of troops during sick call and appointed clinic visits. Less progress is reported for the adult primary care clinic, which is still working on implementing the new forms and procedures.

Reduction in physical therapy referrals. Early analysis of patient activity indicates that there are fewer physical therapy consults for low back pain patients since implementing the guideline. Right now physical therapy is only seeing active duty patients because of staff constraints, so this could be monitored only for this population.

Reduction in inappropriate specialty referrals. The introduction of PMR as the gatekeeper for management of chronic low back pain patients has reduced the total volume of specialty referrals and improved the appropriateness of referrals that are being made.

Reduction in lost duty days. The conservative treatment for acute low back pain patients and use of the standardized profile should reduce the number of patients given total restrictions and the number of days of work lost.

Reduction in FECA costs. The occupational health clinic is using the guideline to manage care for FECA patients. Using information from their cases, problem employment locations are identified and referred to Industrial Hygiene to help reduce incidence of injury and low back pain.

METRICS AND MONITORING

Beaumont is monitoring trends in activity for low back pain patients by clinic, and they are beginning to monitor compliance with key elements of the guideline (e.g., checking for red flags). They have not yet identified an "official" set of metrics, but the data base they are establishing should position them well to define and monitor the measures of importance to their guideline activities. The monitoring process could include assessment of possible impacts of the guideline identified above. The data elements being collected include risk status per DD2766, number of contacts for same low back pain problem, education documented, laboratory work obtained, diagnostic imaging studies obtained, medications, limited activity or profile orders, days absent from work, and MEB disability pending.

OTHER ISSUES

In addition to the issues raised in each of the topical areas covered above, a few other issues directly or indirectly related to the use and implementation of the LBP guidelines were raised. They are briefly outlined below:

Emphasis on prevention. Although the guidelines do not cover prevention, the Beaumont staff feel this is an important area, and they are working on education of Ft. Bliss commanders on prevention of low back pain in active duty personnel. The same is true for the initiatives being taken by the Occupational Health Clinic.

Information exchange and KMN. Although interest was expressed in learning from the other demonstration sites, the Beaumont clinical staff indicated they would not take the time to use web-based systems or email to obtain information. All of them are extremely busy, and they would prefer to rely on one or two people designated to search out information on KMN or other locations and provide it to them. One person who had registered on KMN found that it was not user friendly, and he got lost several times as he was trying to use the system. KMN might be used to provide factual clinical information about low back pain (or any other guideline topic).

Table D-4
Site Visit Participants from William Beaumont Army Medical Center

Participant	Function
MAJ Terry Bagley MD, PMR	Physician champion
MAJ John Beilman AN, ACNP	Facilitator
COL Ney Gore, MD	Deputy Commander, Clinical Services
COL Jimmy Sanders	Deputy Commander
COL Jeanne Chudy, RN	Deputy Commander, Personnel Services
COL Cheryl Killian-Hoffer, RN	Chief, Quality/Utilization Management
Anita Larson, MD	GO clinic, occupational health
CPT John Schultz , AMSC	Physical Therapy
CPT Chris Hofland, DO, OIC	Consolidated Troop Medical Clinic
Ms. Tanya McCollum	QI analyst, CQM facilitator
Hattie Blanco, RN	Tel-A-Nurse
CPT Daniel Yost DO	Adult Primary Care, Manipulation Clinic
CPT Heidi Whitescarver	Patient Education
Harry Smolen, MD, PMR	Physical Medicine and Rehabilitation
Tomas Aguillar, MD	Physician at VA clinic

Appendix E
Modules of the Climate Survey

GUIDELINE IMPLEMENTATION SURVEY
RAND Process Evaluation
(Team Level)

What is the name of your MTF: _____

Completion of this survey is voluntary. You may skip any question that you do not want to answer. Please understand that your answers are completely private and confidential. Your identity will never be attached to the opinions and experiences expressed in this survey.

Please feel free to use the back of this survey booklet to give us your reactions to our process evaluation, tell us about your experience at the conference, or anything else you think is important. **THANK YOU VERY MUCH FOR YOUR TIME AND PARTICIPATION.**

MODULE A THROUGH C

Dimensions of Motivation addressed in Module A:

- Improve quality of care for patients
- Improve patient satisfaction with their care
- Improve the efficiency of patient care
- Reduce error in treatment, ordering tests, or medication
- Improve decisions for specialty referrals
- Make your job easier
- Increase your satisfaction with what you are accomplishing
- Reduce legal liability exposure

Module B Items

Supportiveness of Climate for Guidelines

(4-level response from "no action" to "strong action")

How likely is it that a staff member in your MTF would be noticed if he/she did not cooperate with guideline implementation?

How risky would it be for a staff member in your MTF not to cooperate with guideline implementation?

What do you think would be done if management noticed that a staff member was cooperating with guideline implementation?

What do you think would be done if management noticed that a staff member was not cooperating with guideline implementation?

How likely is it that management would encourage a staff member to follow procedures established to implement the guideline?

How likely is it that management would praise a staff member for cooperating with guideline implementation?

How likely is it that management would notice that a staff member did not have the resources to follow guideline procedures?

Module C Items

Attitudes about Practice Guidelines

(Scale of 1=strongly disagree to 7=strongly agree)

Practice guidelines (do not) oversimplify diagnostic and treatment decisions in medicine.

Practice guidelines could help me deliver better patient care.

Use of practice guidelines in medicine will (not) limit a physician's freedom to take action.

Practice guidelines help reduce variation in clinical practice.

Use of practice guidelines will (not) reduce provider efficiency.

Use of practice guidelines is a good way to summarize and reinforce scientific evidence on diagnosis and management of specific conditions.

MODULE D

HOSPITAL CULTURE

Instructions: These questions relate to the type of hospital that your MTF is most like. Each of these items contains four descriptions of hospitals. Please distribute 100 points among the four descriptions depending on how similar the description is to your MTF. None of these descriptions is any better than the others; they are just different. For each question, please use all 100 points.

For example: In question 1, if Hospital A seems very similar to mine, B seems somewhat similar, and C and D do not seem similar at all, I might give 70 points to A and the remaining 30 points to B.

Hospital Character (Please distribute 100 points)

1. _____ Hospital A is a very *personal* place. It is a lot like an extended family. People seem to share a lot of themselves.

2. _____ Hospital B is a very *dynamic and entrepreneurial* place. People are willing to stick their necks out and take risks.

3. _____ Hospital C is a very formalized and structured place. Bureaucratic procedures generally govern what people do.

4. _____ Hospital D is very *production oriented*. A major concern is with getting the job done. People aren't very personally involved.

Hospital's Managers (Please distribute 100 points)

5. _____ Managers in Hospital A are *warm and caring*. They seek to develop employees' full potential and act as their mentors or guides.

6. _____ Managers in Hospital B are *risk-takers*. They encourage employees to take risks and be innovative.

7. _____ Managers in Hospital C are *rule-enforcers*. They expect employees to follow established rules, policies, and procedures.

8. _____ Managers in Hospital D are *coordinators and coaches*. They help employees meet the hospital's goals and objectives.

MODULE D (cont.)

Hospital Cohesion (Please distribute 100 points)

9. _____ The glue that holds Hospital A together is *loyalty and tradition*. Commitment to this hospital runs high.

10. _____ The glue that holds Hospital B together is *commitment to innovation and development*. There is an emphasis on being first.

11. _____ The glue that holds Hospital C together is *formal rules and policies*. Maintaining a smooth running operation is important here.

12. _____ The glue that holds Hospital D together is the emphasis on *tasks and goal accomplishment*. A production orientation is commonly shared.

Hospital Emphases (Please distribute 100 points)

13. _____ Hospital A emphasizes *human resources*. High cohesion and morale in the organization are important.

14. _____ Hospital B emphasizes *growth and acquiring new resources*. Readiness to meet new challenges is important.

15. _____ Hospital C emphasizes *permanence and stability*. Efficient, smooth operations are important.

16. _____ Hospital D emphasizes *competitive actions and achievement*. Measurable goals are important

Hospital Rewards (Please distribute 100 points)

17. _____ Hospital A distributes its rewards *fairly equally* among its members. It's important that everyone from top to bottom be treated as equally as possible.

18. _____ Hospital B distributes its rewards based on *individual initiative*. Those with innovative ideas and actions are most rewarded.

19. _____ Hospital C distributes its rewards based on *rank*. The higher you are, the more you get.

20. _____ Hospital D distributes its rewards based on the *achievement of objectives*. Individuals who provide leadership and contribute to attaining the hospital's goals are rewarded.

PLEASE CONTINUE ON THE BACK

MODULE E

INSTRUCTIONS

In this section you are asked to assess your MTF's efforts to improve the quality of care and services it provides. Please read each statement carefully. Indicate the extent to which you agree or disagree that the statement characterizes your MTF by circling the appropriate response (1 = Strongly Disagree, 5 = Strongly Agree). In answering the questions, you should think about what the MTF is actually like now, not how you think it might be in the future or how you might wish it to be.

RESPONSE CATEGORIES

In circling a response, please keep in mind the following general guidelines regarding the choices of response categories:

- Circle **Strongly Agree** when the statement represents a completely accurate description of your MTF.
- Circle **Strongly Disagree** when the description is completely inaccurate.
- Circle **Neither Agree Nor Disagree** when you believe the statement is neither a particularly accurate nor a particularly inaccurate description of your MTF. This situation may arise because there is wide variation in the activities the statement describes. For example, you might circle neither agree nor disagree when the statement is true of some departments but not of others.
- Circle "**Don't Know"** if you do not have enough information to answer a question.

GLOSSARY/SPECIAL INSTRUCTIONS

MTF:	When asked to make a global judgement about your MTF, please respond based upon your knowledge and experience of the department or area in which you are currently employed, the other departments you come in contact with, and the information you have on your MTF as a whole.
Quality of Care and Services:	Throughout the survey you are asked to make judgements about the "quality of care and services provided." "Quality of care and services" is a general category and refers to the technical quality of care to patients and how well patient services needs are met in your MTF.

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Don't Know
LEADERSHIP						
1. The Command Group provides highly visible leadership in maintaining an environment that supports quality improvement.	1	2	3	4	5	9
2. The Command Group consistently participates in activities to improve the quality of care and services.	1	2	3	4	5	9
3. The Command Group has demonstrated an ability to manage the changes (e.g., organizational, technological) needed to improve the quality of care and services.	1	2	3	4	5	9
4. The Command Group acts on suggestions to improve the quality of care and services.	1	2	3	4	5	9
5. The Command Group generates confidence that efforts to improve quality will succeed.	1	2	3	4	5	9
INFORMATION AND ANALYSIS						
6. The MTF uses a wide range of data and information about the quality of care and services to make improvements.	1	2	3	4	5	9
7. The MTF continually tries to improve how it uses data and information on the quality of care and services.	1	2	3	4	5	9
8. The MTF continually tries to improve the accuracy and relevance of its data on the quality of care and services provided.	1	2	3	4	5	9
9. The MTF continually tries to improve the timeliness of its data on the quality of care and services provided.	1	2	3	4	5	9
EMPLOYEE INVOLVEMENT IN QUALITY PLANNING						
10. MTF staff are involved in developing plans for improving quality.	1	2	3	4	5	9

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Don't Know
11. Non-managerial staff are playing a key role in setting priorities for quality improvement.	1	2	3	4	5	9
HUMAN RESOURCE UTILIZATION						
12. MTF staff are given education and training in how to identify and act on quality improvement opportunities.	1	2	3	4	5	9
13. MTF staff are given education and training in statistical and other quantitative methods that support quality improvement.	1	2	3	4	5	9
14. MTF staff are given the needed education and training to improve job skills and performance.	1	2	3	4	5	9
15. MTF staff are rewarded and recognized (e.g., financially and/or otherwise) for improving quality.	1	2	3	4	5	9
16. MTF staff have the authority to correct problems in their area when quality standards are not being met.	1	2	3	4	5	9
17. MTF staff are supported when they take necessary risks to improve quality.	1	2	3	4	5	9
18. The MTF has an effective system for employees to make suggestions to management on how to improve quality.	1	2	3	4	5	9
QUALITY MANAGEMENT						
19. The quality assurance staff effectively coordinate their efforts with others to improve the quality of care and services the hospital provides.	1	2	3	4	5	9
20. The MTF has effective policies to support improving the quality of care and services.	1	2	3	4	5	9
21. The MTF works closely with suppliers to improve the quality of their products and services.	1	2	3	4	5	9

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Don't Know
22. The MTF tries to design quality into new services as they are being developed.	1	2	3	4	5	9
23. The MTF views quality assurance as a continuing search for ways to improve.	1	2	3	4	5	9
QUALITY RESULTS						
24. The MTF has done a good job of simplifying how care and services are provided.	1	2	3	4	5	9
25. Over the past few years, the MTF has shown steady, measurable improvements in the quality of care provided to medical, surgical and obstetric patients.	1	2	3	4	5	9
26. Over the past few years, the MTF has shown steady, measurable improvements in the quality of care provided by clinical support departments such as laboratory, pharmacy, and radiology.	1	2	3	4	5	9
27. Over the past few years, the MTF has shown steady, measurable cost reduction while maintaining or improving quality.	1	2	3	4	5	9
CUSTOMER SATISFACTION						
28. The MTF does a good job of assessing current patient needs and expectations.	1	2	3	4	5	9
29. MTF staff promptly resolve patient complaints.	1	2	3	4	5	9
30. Patients' complaints are studied to identify patterns and prevent the same problems from recurring.	1	2	3	4	5	9
31. The MTF uses data from patients to improve services.	1	2	3	4	5	9
32. The MTF uses data on customer expectations and/or satisfaction when designing new services.	1	2	3	4	5	9

Appendix F
MEDCOM Form 695-R and
Provider Pocket Card on Low Back Pain Care

MEDICAL RECORD - LOW BACK PAIN For use of this form see MEDCOM Cir 40-6	TREATMENT FACILITY	DATE

SECTION I - VITAL SIGNS ***(To be completed by Ancillary Support Staff Personnel)***

Time: _____ Temp: _____ Pulse: _____ Resp: _____ BP: _____ Ht: _____ Wt: _____

Duration of present episode of back pain: ☐ < 6 Weeks ☐ > 6 Weeks _____
(Signature)

SECTION II - DEMOGRAPHICS ***(To be completed by Patient)***

PART A - INJURY / SYMPTOMS

1. Please rate the severity of your back pain during the past week by circling a number on the pain scale below.

No pain 0 1 2 3 4 5 6 7 8 9 10 Worst pain you've ever had

2. During the past week did you experience any pain, numbness or tingling in either of your legs? ☐ Yes ☐ No
3. Did your pain begin: ☐ With an accident/injury. ☐ Suddenly. ☐ Slowly, over days, weeks, or months.
4. In the past, have you experienced any of the following?
   a. Back pain? - ☐ Yes ☐ No
   b. Back surgery, or was back surgery recommended? - - - ☐ Yes ☐ No
   c. Pain, numbness or tingling in either of your legs? - - - - ☐ Yes ☐ No

PART B - WORK HISTORY / JOB CHARACTERISTICS

5. What is your current job title? _____
6. Are you: ☐ Active military ☐ Retired military ☐ Civilian If military, what MOS? _____
7. Do you work in the following job types: Construction, Agriculture, or Transportation? - - - ☐ Yes ☐ No
8. On the job, do you use equipment that vibrates, for example power tools? - - - - - - - - ☐ Yes ☐ No
9. Does your job require sitting for extended periods without opportunities for you to get up? ☐ Yes ☐ No
10. Does your job involve any of the following materials handling tasks?
    a. Lifting?-- - - - - - - - - ☐ Yes ☐ No c. Pushing/pulling? - - - - - - - ☐ Yes ☐ No
    b. Lifting objects overhead? - - ☐ Yes ☐ No d. Twisting your back, while lifting? ☐ Yes ☐ No
11. Estimate how frequently you lift objects on your job each hour. *(Circle a number)*

Never have to lift 0 1 2 3 4 5 6 Lift very frequently

PART C - STRESS FACTORS / PRE-INJURY

12. Prior to your current back problem:
    a. Did you feel that you had many stresses in your life? - - - - - - - - - ☐ Yes ☐ No
    b. Did you experience physical symptoms (problems) most of the time?- - ☐ Yes ☐ No
    c. Did you feel "down" (blue, depressed) most of the time? - - - - - - - ☐ Yes ☐ No
13. Do you smoke cigarettes? ☐ Yes ☐ No If yes, how many packs per day? _____

PATIENT'S IDENTIFICATION *(For typed or written entries give: Name - last, first, middle; grade; date; hospital or medical facility)*	_____ *(Patient's Signature)*

SECTION III - MEDICAL HISTORY, ASSESSMENT, DIAGNOSIS, AND TREATMENT ***(To be completed by Primary Care Manager)***

Patient's chief complaint: _____

PART A - MEDICAL HISTORY

1. Cause of back pain: ☐ Non-Traumatic ☐ Traumatic *(Describe)*: _____

2. If non-traumatic, does the patient have any of the following red flag risk factors?

Age > 50	☐ Yes	☐ No	History of cancer	☐ Yes	☐ No
Fevers	☐ Yes	☐ No	Metabolic disorder	☐ Yes	☐ No
Night pain	☐ Yes	☐ No	Bowel or bladder symptoms	☐ Yes	☐ No
Unexplained weight loss	☐ Yes	☐ No	Saddle anesthesia	☐ Yes	☐ No

PART B - PHYSICAL ASSESSMENT

			(Comments or description of abnormalities)
Bowel/Bladder Sx	☐ No	☐ Yes	
Neurological deficit	☐ No	☐ Yes	
Straight leg raise	☐ Normal	☐ Abnormal	
Reflexes (knee, ankle, babinski)	☐ Normal	☐ Abnormal	
Sensation (L4-5 / S1)	☐ Normal	☐ Abnormal	
Strength (L4-5 / S1)	☐ Normal	☐ Abnormal	
ROM (flex/ext/RSB/LSB/ro)	☐ Normal	☐ Abnormal	
Tender to palpation:	☐ No	☐ Yes	

PART C - DIAGNOSIS

☐ Acute low back pain ☐ Chronic low back pain ☐ Acute sciatica ☐ Chronic sciatica / limb pain
☐ Other *(Specify)*:

PART D - TREATMENT PLAN

1. MEDICATION: ☐ Acetominophen 500 mg 1-2 po every 4 hr ☐ ASA 325 mg 1-2 po every 4 hr
☐ Ibuprofen 600/800 mg po every 8 hr ☐ Other *(Specify)*: _____

2. IMAGING *(Indicate type and reason)*: ☐ X-ray ☐ MRI

☐ > 50 or < 18 years of age
☐ Pain at rest or night pain
☐ No history of CA
☐ Fever > 38C or 100.4F > 48 hours
☐ Neuromotor deficit
☐ No improvement in 4-6 weeks
☐ R/O ankylosing spondylitis/spondylo-arthropathy
☐ Low energy trauma in high risk patient (osteoporosis)
☐ High energy trauma (fall from height, MVA)
☐ History of drug/alcohol abuse
☐ Other *(Specify)*: _____

3. REFERRAL:
☐ Self-care
☐ Self-care patient materials provided
☐ Advised to reduce weight
☐ Referral to dietician for weight reduction
☐ Advised about stress management
☐ Referral to stress management
☐ Advised to stop smoking
☐ Referral to smoking cessation program
☐ Referral to physical therapy
☐ Referral to neuro surgeon
☐ Referral to orthopedic surgeon
☐ Other *(Specify)*: _____

4. DUTY STATUS: ☐ Return to light duty ☐ Quarters 48 hours ☐ Other *(Specify)*: _____

5. FOLLOW-UP: ☐ None ☐ 48 hours ☐ 1-3 weeks ☐ 6 weeks
☐ Patient instructed to contact clinic ASAP if symptoms worsen.

_____ _____
(PCM Name) *(PCM Signature)*

Provider Pocket Card on Low Back Pain Care

Side 1 —

DoD/VA Practice Guideline for Primary Care Management of *Low Back Pain* (*LBP)*

1. Evaluate for Serious Health Problems

- Look for **red flags**:
  - Hx – identify cancer, other issues
  - Neuro assessment
  - PE – identify other factors
- Refer patients with bowel or bladder symptoms immediately to ortho or neurosurgery
- Non-emergent red flag cases, assess with diagnostic tests for consult/referral

2. Conservative treatment for Acute LBP Patients (≤ 6 weeks duration)

70% of patients improve by 2 weeks,
90% improve by 4+ weeks

- NSAIDs and Tylenol are the meds of choice; opiates/muscle relaxants give no additional proven benefit
- X-rays and MRIs are of proven benefit only in specific situations
- Modified light activity improves outcomes
- Bedrest of more than 48 hours is of no additional proven benefit (over)

Side 2 —

Primary Care Management of *LBP* (Cont.)

- Manipulation may be helpful if no sciatica
- **Instruct** patient in self-care and to call if pain gets worse
- Monitor/adjust treatment as appropriate

3. Evaluate Patients Who Get Worse

- **Re-evaluate** worsening patients **quickly**

4. Evaluate Patients Who Don't Improve

- Re-evaluate after **4-6** weeks
- Perform hx and PE to **r/o other serious** problems
- Use self-report questionnaires for **psychological** distress/risk factors

5. Manage Chronic (> 6 weeks duration) LBP or Sciatica

- Chronic sciatica (radiating pain below knee) or chronic LBP – do appropriate **diagnostic tests** for consult/referral
- Active duty soldiers with either condition (not improving > **4-6** weeks) – assess for disposition

Appendix G
SAMPLE ACTION PLAN FOR THE LOW BACK PAIN GUIDELINE

Worksheet 1. IMPLEMENTATION STRATEGY
Guideline: Primary Care Management of Low Back Pain

Overall Implementation Strategy/Focus: Will focus on ensuring that primary care clinics are using appropriate conservative treatment for acute low back pain patients, and that changes in patients' functional and pain status are monitored and the results are used to guide care processes. Special attention will be given to the two TMCs that are farthest from the guideline standards.

Key Guideline Element	Gaps in Current Practices (Planning Step 1)	Action Strategy (Planning Step 3)
1. Identify serious problems	About 90 percent of their patients are assessed for red flag conditions at the initial visit.	***Low priority for actions***; will rely on monitoring of red flag assessments using the documentation form.
2. Conservative treatment of acute LBP patients	Pain ratings or disability measures are documented on only 25% of patients at the initial visit. Providers in 2 TMCs are not consistently educating patients on self-care and exercise; other clinics are okay.	***High priority for actions*** to ensure that all aspects of conservative treatment are being used in all clinics. Focus on the TMCs that appear to be farthest from the guideline standards.
3. Evaluate patients who get worse	Patients who get worse by 3 weeks are routinely referred to Neurosurgery after the initial visit, without primary care re-evaluation.	***High priority for actions*** to ensure appropriate role for primary care providers in managing care for acute low back pain patients.
4. Evaluate patients who do not get better	From primary care provider reports, there appear to be inconsistencies in how acute back pain patients are managed after the initial visit, especially at 2 TMCs.	***Moderate priority for actions.*** Will pursue additional data collection on practices for ongoing management of acute low back pain patients after initial visit.
5. Manage chronic LBP or sciatica	It is not known how patients with continuing back pain > 6 weeks after first visit are being managed. MRIs are ordered for 70% of chronic($\geq$ 6 weeks duration) sciatica patients, and 100% of those with positive findings are referred to Neurosurgery.	***Low priority for actions***; will build upon actions for guideline element 3 for management of acute back pain patients who get worse. Will pursue additional data collection on management of chronic back pain patients.

Worksheet 2A. ACTION PLAN FOR GUIDELINE INTRODUCTION AND STAFF EDUCATION
Guideline: Primary Care Management of Low Back Pain

Identify actions for **guideline introduction & education**. (IN)	Designate someone to serve as **lead** for the action and **other staff** to be involved.		Identify the **tools** and **resources** for the action.	Specify the action timeline.
Action #IN.1 Hold working meeting with clinic leaders to run cases through guideline and build strategy to introduce new practices at the clinics.	**Lead**: Guideline champion	**Other Staff**: Command (introduce) Clinic leaders QM/UM staff	CME video on the DoD/VA low back pain guideline Documentation form Patient education pamphlet	Start Month 1 Complete Month 1
Action #IN.2 Conduct CME briefings for all clinic physicians, each to be held at the clinic sites. Train on documentation form and patient education methods.	**Lead**: Guideline champion	**Other Staff**: Clinic leaders QM/UM staff Physical therapy	CME video on the DoD/VA low back pain guideline Documentation form Patient education pamphlet	Start Month 1 Complete Month 3
Action #IN.3 Conduct training sessions for other clinic staff on practices called for by the guideline. Introduce to tools.	**Lead**: QM/UM staff Clinic leaders	**Other Staff**: Nursing command Physical therapy	One-sheet guideline key elements and algorithm Documentation form Patient education pamphlet Patient video	Start Month 1 Complete Month 2
Action #IN.4 Conduct CME briefings for physicians in the specialty clinics and the ER, highlighting management of patients whose pain continues.	**Lead**: Guideline champion	**Other Staff**: Command (introduce) QM/UM staff	One-sheet guideline key elements and algorithm Documentation form Patient education pamphlet	Start Month 2 Complete Month 3

Worksheet 2B. PLANNING WORKSHEET FOR PRACTICE CHANGE IMPLEMENTATION
Guideline: Primary Care Management of Low Back Pain

Key Guideline Element: 2. Conservative treatment of acute LBP patients

Identify actions in the strategy for this guideline element.	Designate someone to serve as **lead** for the action and **other staff** to be involved.		Identify the **tools** and **resources** for the action.	Specify the action timeline.
Action #2.1 Test use of the low back pain documentation form (695-R) in one clinic to see its effects on length of visits.	**Lead**: Guideline champion	**Other Staff**: Clinic leaders Facilitator QM/UM staff	Documentation form	Start Complete Month 1 Month 2
Action #2.2 If #2.1 positive, establish new procedures and staff roles to complete documentation form for each primary care visit.	**Lead**: Dep. commanders	**Other Staff**: Clinic leaders QM/UM staff	Documentation form Clinic procedure manual	Start Complete Month 2 Month 3
Action #2.3 Define and enact procedures to educate patients about self-care and exercise and train all clinic staff to use them.	**Lead**: Clinic leaders	**Other Staff**: QM/UM staff	Patient education pamphlet Model back class	Start Complete Month 2 Month 3
Action #2.4 Establish standard profiling criteria for active duty personnel with low back pain, to be used by all TMCs.	**Lead**: Dep. commanders	**Other Staff**: Clinic leaders QM/UM staff	Standard profile form	Start Complete Month 3 Month 4

Worksheet 2B. PLANNING WORKSHEET FOR PRACTICE CHANGE IMPLEMENTATION
Guideline: Primary Care Management of Low Back Pain

Key Guideline Element: 3. Evaluate patients who get worse

Identify actions in the strategy for this guideline element.	Designate someone to serve as **lead** for the action and **other staff** to be involved.		Identify the **tools** and **resources** for the action.	Specify the action timeline.
Action #3.1 In the primary care clinics, enact a process to instruct patients on follow-up calls during conservative treatment if their pain gets worse, to handle calls when received, and to make follow-up appointments.	**Lead**: Dep. Commander Clinic leader	**Other Staff**: Clinic teams Guideline champion	Appointment system Nursing and support staff time	Start Complete Month 3 Month 5
Action #3.2 Create a triage function in the neurosurgery clinic to assist primary care providers in determining when to refer both acute back pain patients whose pain is getting worse and chronic patients.	**Lead**: Guideline champion Neurosurgery chief	**Other Staff**:	Written criteria for referrals	Start Complete Month 3 Month 3

Worksheet 2B. PLANNING WORKSHEET FOR PRACTICE CHANGE IMPLEMENTATION
Guideline: Primary Care Management of Low Back Pain

Key Guideline Element: 4. Evaluate patients who do not get better

Identify actions in the strategy for this guideline element.	Designate someone to serve as **lead** for the action and **other staff** to be involved.		Identify the **tools** and **resources** for the action.	Specify the action timeline.
Action #4.1 Document the current methods used by primary care providers to manage care for acute back patients following the initial visit, focusing on tracking of patients who do not get better.	**Lead**: Guideline champion QM/UM leader	**Other Staff**: Clinic leaders Nursing leaders	Checklist of steps to document Staff to perform research Data on visits and services	Start Complete Month 5 Month 7
Action #4.2 Based on results of action #4.1, determine what actions (if any) to take to improve ongoing management of acute back pain patients.	**Lead**: (to be determined)	**Other Staff**: (to be determined)	(to be determined)	Start Complete (to be determined)

Worksheet 3A. GANTT CHART OF TIMELINE FOR GUIDELINE IMPLEMENTATION
Guideline: Primary Care Management of Low Back Pain

Actions	MONTH OF WORK											
	1	2	3	4	5	6	7	8	9	10	11	12
Introduction & education:												
#IN.1 CME for leaders												
#IN.2 CME for clinic providers												
#IN.3 Training for clinic staff												
#IN.4 Training for ER, specialty												
Conservative treatment:												
#2.1 Test documentation form												
#2.2 Introduce form, per test												
#2.3 Patient education methods												
#2.4 Introduce standard profiling form												
Patients who get worse:												
#3.1 Patient follow-up process												
#3.2 Neurosurgery triage												
Patients don't get better:												
#4.1 Document care methods												
#4.2 Act based on #4.1 data												

Worksheet 4. METRICS AND MONITORING
Guideline: Primary Care Management of Low Back Pain

Key Guideline Element	Metric	Data Sources	Monitoring Schedule
Identify serious problems	Percent of initial visits documented to check for all "red flag" conditions	Documentation form	Quarterly
Conservative treatment of acute LBP patients	Percent of acute patients with "before and after" pain scale information	Documentation form,	Quarterly
	Average change in functional status based on Oswestry scale	Oswestry form (perhaps on documentation form)	Quarterly
Evaluate patients who get worse	Percent of acute patients referred to Neurology with <6 weeks duration	ADS, CHCS	Monthly
Evaluate patients who do not get better	Percent of patients instructed on follow-up procedures if pain does not get better	Documentation form, medical charts	Quarterly
	Of patients who call for follow-up, percent who have subsequent visits.	Appointment records	Monthly
Manage chronic LBP or sciatica	Percent of chronic sciatica patients and positive imaging who are referred to surgical specialist	ADS, medical chart	Quarterly
	Percent of chronic back pain patients who are referred to back school	Documentation form, medical chart	Quarterly